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REVIEW OF MILITARY LITERATURE

THE COMMAND AND GENERAL STAFF SCHOOL
QUARTERLY

Editor
MAJOR FRED DURING

FOREWORD

The object of this publication is a systematic review of current military literature, through cataloging articles of professional value, in selected military and naval periodicals, in the domestic and foreign field.

Articles from foreign periodicals are treated by translations of titles and digests of contents; material of particular importance is covered more extensively in a Section of "Abstracts of Foreign-language Articles."

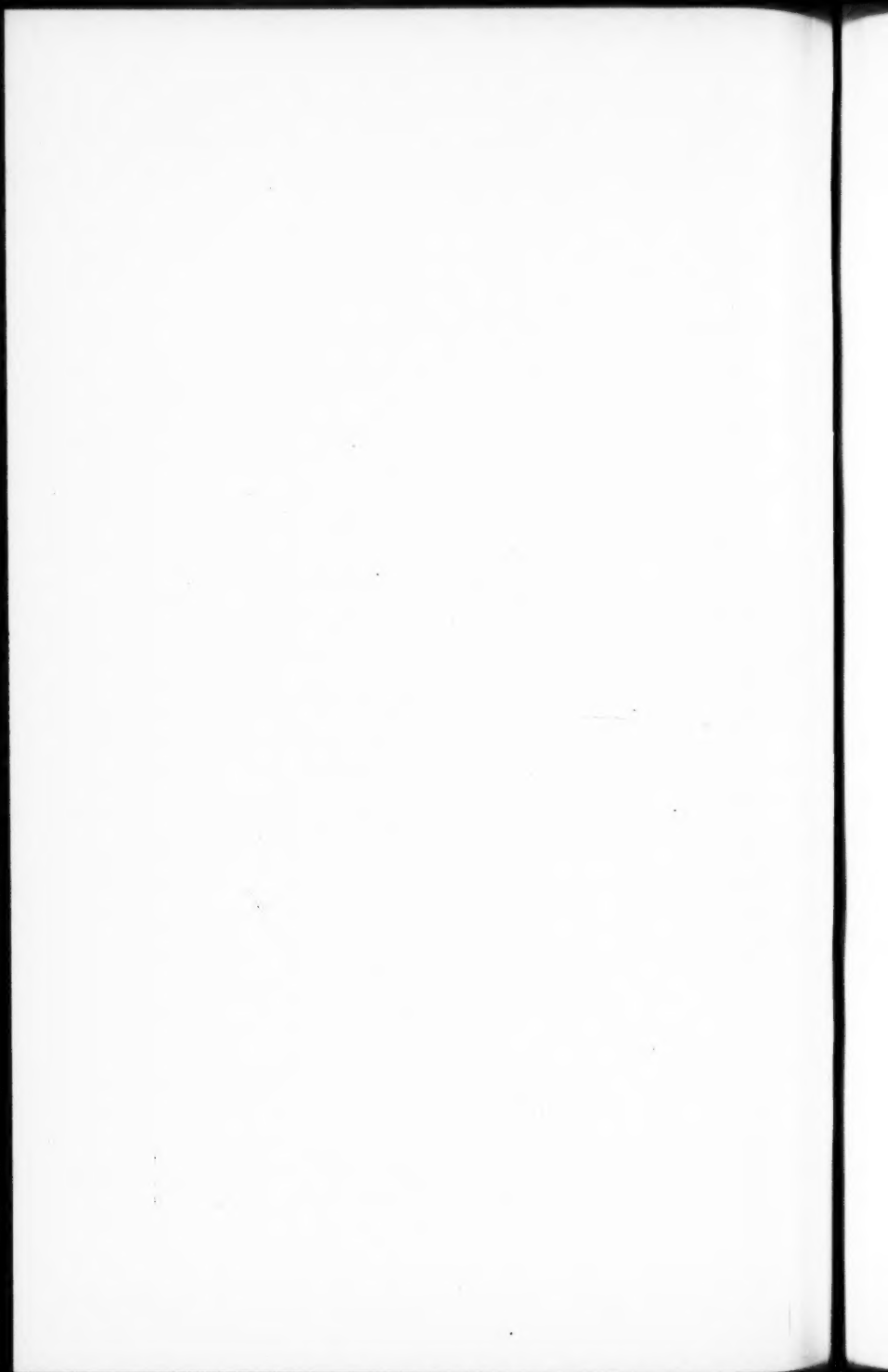
A "Book Review" Section contains reviews of outstanding books, recently accessioned, which are of particular professional significance.

This material is published as a guide to modern military tendencies and to inspire vigorous thought on the subjects treated.

The opinions expressed by authors are not necessarily official.

September, 1935
Third Quarter

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A—Foreign-language Periodicals; B—English-language Periodicals;
C—Abstracts of Foreign-language Articles; D—Foreign-language Book
Reviews; E—English-language Book Reviews; F—Original Studies.

Maj. G.J. Braun: *Militär-Wochenblatt* (11, 18 March, 1935).

Lt.Col. N.B. Briscoe: *Revue de Cavalerie* (January-February, 1935).

Lt.Col. P.C. Bullard: *Revue du Génie Militaire* (January-February, 1935).

Maj. F. During: *Militärwissenschaftliche Mitteilungen* (January, February, March, 1935); *Revue Militaire Suisse* (January, February-March, 1935); *Rivista di Artiglieria e Genio* (December, 1934, January, February, 1935); *Wehr und Waffen* (January, February, March, 1935).

Maj. G.B. Guenther: *Sanct Christophorus* (January, February, March, 1935); *Wissen und Wehr* (January, February, March, 1935).

Capt. W.G. Johnson: *Revue d'Infanterie* (January, February, March, 1935).

Lieut. R.E. Moore: *Bulletin Belge des Sciences Militaires* (January, February, March, 1935).

Capt. M.D. Taylor: *Nazione Militare* (January, March, 1935); *Revista del Ejército y de la Marina* (January, February, March, 1935); *Revue d'Artillerie* (January, February, March, 1935); *Revue Militaire Française* (January, February, March, 1935).

Capt. H.D. Vogel: *Pioniere* (February, 1935).

Lt.Col. C.H. Wash: *Revue de l'Armée de l'Air* (January, February, March, 1935).

Section 1
ORIGINAL MILITARY STUDY

This section contains original contributions by graduates of The Command and General Staff School.

**A CRITICAL ANALYSIS OF THE OPERATIONS OF THE
GERMAN FORCES OPPOSED TO THE AMERICAN
1st DIVISION FROM 1-11 OCTOBER, 1918**

By Major M.S. Eddy, Infantry

FOREWORD

This is a study and a critical analysis of the tactical operations of those forces of the German Army which were opposed to the American 1st Division in that phase of the Meuse-Argonne campaign of the World War, between 1 October and 11 October, 1918. It is based on the operations of these forces as actually depicted by their respective war diaries, combat reports, messages, and other records, most of which were written on the battlefield during the period covered, the translations of which are contained in Volume IV, World War Records, First Division, A.E.F. (German Documents, Meuse-Argonne).

The study and critical analysis made are almost entirely of the infantry operations. The artillery operations have been deliberately excluded because the enormity of the subject makes it one for a study in itself. It is believed that a detailed study of the skill with which the German artillery units in this phase of the Meuse-Argonne campaign were employed to the maximum advantage in the face of greatly depleted personnel and material, together with the most trying and difficult ammunition supply problems, would prove of benefit to both the Command and General Staff School and the Field Artillery School.

Operations of aviation units and other auxiliary arms are also excluded for the reason that similar records of these arms are not available.

In a number of instances, the records of certain infantry regiments and battalions are incomplete or entirely missing,

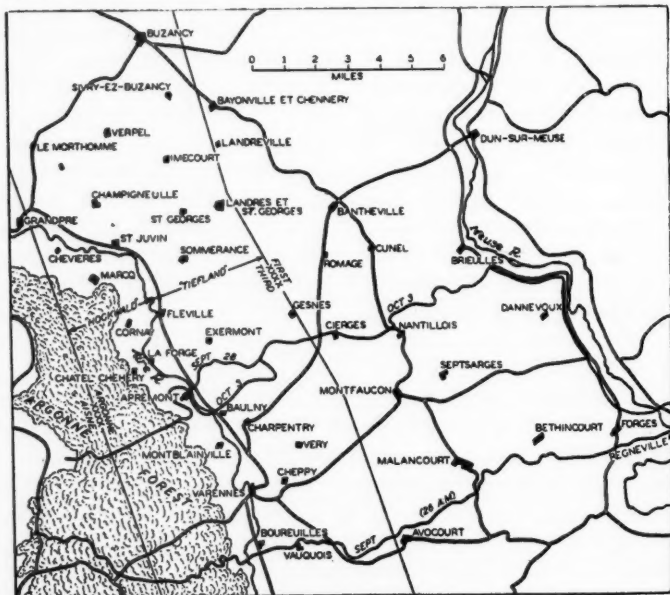
which leaves missing a verification of the operations as reported by a superior or adjacent unit.

It is believed, however, that the records available and the information contained therein are sufficient to piece together the narrative of the operations of these forces down to and including the infantry regiments, which in many cases were the equivalent in strength to our present peace strength companies.

On such a narrative is this critical analysis made.

ORIENTATION

1. *A summary of the units of the German army opposed to the American 1st Division from 1 October to 11 October, 1918:*



Map No. 1

a. *Armies and corps.*—The American 1st Division was opposed during this period by elements of the German Third and Fifth Armies. The sector which it took over on the night of 30 September-1 October was opposite a portion of the front line held by the German LVIII Corps, which was known

as Group Argonne. German army corps were more commonly termed groups, usually named for some vital or prominent terrain feature located within the sector area occupied by each particular group or corps instead of their real numerical designation. As the German records refer to these units entirely by this method of designation, the same method will be used throughout this study. Group Argonne was the left group of the German Third Army until 12:00 noon, 5 October, when it was transferred to and became the right group of the German Fifth Army (see Map No. 1). At this time, Group Argonne was commanded by Lieutenant General Von Kleist.

b. Divisions.—During the period covered by these operations, Group Argonne was composed from time to time of the following divisions:

- 1st Guard Division
- 2d Landwehr Division
- 5th Guard Division
- 28th Reserve Division
- 37th Division
- 41st Division
- 45th Reserve Division
- 52d Division.

The Appendix shows the combat units of which these divisions were composed. Of these divisions, only the 5th Guard, 37th, 41st, 45th Reserve, and the 52d were actually opposed to the American 1st Division. The other divisions listed participated in these operations in that only a few of their smaller units were used as reserves and in small counter-attacks.

2. Situation as of 1 October, 1918.—a. American 1st Division.—On the night of 30 September-1 October, the American 1st Division relieved the American 35th Division with one regiment of the 82d Division attached, on the front along the high ground running northeast from Baulny to the Bois Communal de Baulny (see Map No. 2).

b. Sector of Group Argonne.—Group Argonne was the extreme left group of the German Third Army. It occupied a sector as shown on Map No. 1. The sector of the group was divided into two subsectors: "Hochwald," which included the wooded heights of the Argonne, and "Tiefeland," which

was in the valley of the Aire River and as far east as the line: Gesnes—Landres—et—St. Georges. The boundary between the two subsectors was the Aire River. Subsector "Tiefeland" stood directly in the path forward of the American 1st Division. The command post of the group was at Buzancy.

c. Terrain study of Tiefeland Subsector (see Map No. 2).—

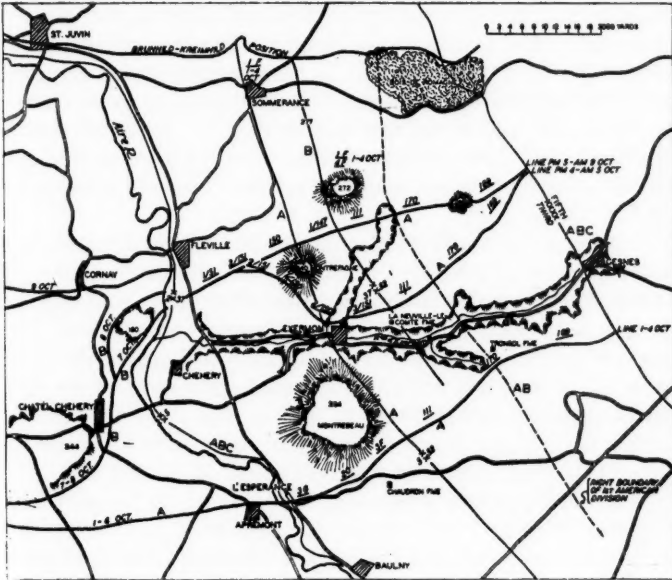
The terrain in the forward part of the subsector consists of a succession of hills whose densely wooded tops and bare glacial-like slopes offer considerable advantage for defense. The most prominent of these hills are Montrebeau, Montrefagne, the prominent ridge of hill 272, hill 269, and hill 277. In addition to the heavily wooded areas which cover these hills are numerous small patches of woods that offer most favorable opportunities for machine-gun defenses. Running laterally through the forward center of the subsector is the deep and well defined Exermont Ravine through which the fordable Gesnes Brook flows into the Aire River. The right of the subsector, which slopes down to the open Aire Valley, is completely exposed to the Argonne Forest west of the Aire River. West of the Aire River is a series of high hills which are approximately the same elevation as those to the east. Artillery from the west of the Aire River can completely enfilade the Exermont Ravine. The left of the subsector is made up of broken terrain with large wooded areas and high hills interspersed to the east. Running perpendicularly from the north into Exermont Ravine are several draws and deep ravines which offer excellent approaches for the outflanking of the high ground just north of the ravine. The terrain in front of the subsector, though hilly, is quite open and offers fair fields of fire.

d. Operations of Group Argonne just prior to 1 October.—

On 29 and 30 September, the troops of the Tiefeland subsector launched strong counterattacks against the American 35th Division, which had taken Montrebeau Hill on the 28th. The American 35th Division was forced to give ground, losing Montrebeau Hill and finally making a stand along the high ground running northeast from Baulny, where it was relieved by the American 1st Division on the night of 30 September.

e. Battle order of Group Argonne on 1 October.—(1) The 2d Landwehr Division held the right of the group front occupying the Hochwald subsector. Although this division had been rated only as a fourth-class division and had been badly

used in the earlier days of the Meuse-Argonne campaign, it fought hard and for days to come was to offer some of the strongest resistance encountered by American troops in the Aire Valley. While the American 1st Division never directly attacked the sector of this division, it was subjected throughout the period of 4 October to 8 October to the enfilading fire of the artillery of the 2d Landwehr Division.



Map No. 2

(2) The 5th Guard Division (see Map No. 2) held the western half of the Tiefland subsector and was directly opposite the sector of the American 1st Brigade. It is interesting to note that its left boundary almost exactly conformed to the right boundary of the 1st Brigade. The division, at this time, was commanded by Major General von Haxthanson. Its command post was at St. Juvin. The division had participated in the counterattack of 28 and 29 September against the American 35th Division and had played the major role in the recapture of Montrebeau Hill, which had been lost in the first three days of the American offensive launched on

26 September. By morning, 1 October, the division as the result of its counterattack had reached the line shown on Map No. 2. Its battle order from west to east was: 3d Foot Guard Regiment, 20th Infantry Regiment, 3d Grenadier Guard Regiment. The 1st Battalion, 122d Landwehr Regiment of the 2d Landwehr Division on the right, was in regimental reserve located in the Exermont Ravine.

The 5th Guard Division had been rated as a first-class division until the spring of 1918. Because of its rough handling, however, in the Hautevesnes-Torcy sector in early June, 1918, when it lost about one-half of its effectives, much of its value as an attack division had been destroyed. Again on the Aisne in September and in the first four days of the Meuse-Argonne, its losses had been extremely heavy; so by 1 October the division had reached a stage of almost complete exhaustion and demoralization.

Amongst the official records of the division on this date are a number of messages which tend to picture its true condition at that time. In one instance, a battalion commander, a first lieutenant, informed his regimental commander that because of the extreme hardships suffered during the past month, his men had reached a stage of exhaustion where they could "scarcely be induced to stay in line." And then he added that in the event of an attack he denied all responsibility for what "he knows will happen."

A message from a company commander to his battalion commander stated that despite the arrival of new men from furlough, the strength of his company was only 2 officers, 4 noncommissioned officers, and 22 enlisted men; that many were reporting sick and some had disappeared; that the men were unable to perform their ordinary duties because of their state of exhaustion.

A message from another company commander to his battalion commander stated that he refused any responsibility because of the exhaustion and depletion of his command by men disappearing.

One company commander demonstrated a sense of humor in the face of what must have seemed a hopeless situation by making the following entry in his company war diary for 2 October: "Received the following replacements: one private. Reorganized 2d Platoon."

A message from the battery commander of an accompanying battery attached to the 3d Guard Foot Regiment complained of the exhaustion of his men and animals from being in the line eight days during severe, inclement weather and requested the battery's relief. The regimental commander disapproved the request and was so indorsed by the brigade commander.

The numerical strength of the infantry units of the 5th Guard Division at this time was as follows:

3d Guard Foot Regiment:

One battalion:

24 officers, 48 noncommissioned officers, 351 enlisted men

One provisional battalion of mixed units attached:

3 officers, 30 noncommissioned officers, 154 enlisted men

20th Infantry Regiment:

One battalion:

18 officers, 47 noncommissioned officers, 263 enlisted men

3d Grenadier Guard Regiment:

Three battalions totalling:

19 officers, 63 noncommissioned officers, 293 enlisted men

1st Battalion, 122d Landwehr Regiment:

9 officers, 319 noncommissioned officers and enlisted men

Total strength of division:

73 officers, 1568 enlisted men.

With this force of exhausted men the 5th Guard Division prepared to defend its position against the onslaughts of the fresh and newly inserted American 1st Brigade, at that time totalling more than 5500 officers and men.

The hopelessness of the situation at this time, not only to the 5th Guard Division but to the entire German cause is demonstrated in a message received by Group Argonne on 1 October from the Third Army, which states:

"Several events of the last days of combat force me to accent anew that Army reserves of the Groups will be inserted or moved only with the prior approval of the Army

*Headquarters. * * * Army Headquarters has only a very limited number of reserves at its disposal and can not count upon further reinforcements. This serious situation forces us to a very sparing use of the same. * * **

"The Commanding General
Sgd. V. Einem"

The reason for leaving the 5th Guard Division in the line at this time and thus holding the left of Tiefland subsector so weakly may or may not be expressed in the war diary of Group Argonne in which is written on 3 October: "The enemy, cautious since 29 September, will have to silence the enfilade fire from the Argonne before he again renews his attacks east of the Aire."

(3) The 52d Infantry Division (see Map No. 2) was holding the eastern half of the Tiefland subsector, having just completed the relief of the 1st Guard Division on the night of 30 September-1 October. The major portion of its sector was opposite the sector of the American 2d Brigade, both units having almost the identical west boundary, while the eastern boundary of the German 52d Division extended somewhat further to the east than that of the American 2d Brigade. The division was commanded at this time by Major General von Borries. Its command post was located at Landres. Its order of battle from west to east was: 111th Infantry Regiment, 170th Infantry Regiment, 169th Infantry Regiment. The 3d Battalion 170th Infantry Regiment was in division reserve just north of Neuville Comte Farm.

In contrast to the 5th Guard Division, the 52d Division was rated at this time as one of the best in the German Army. Throughout the war, and especially in 1918, it had participated in a great deal of heavy fighting and had always acquitted itself most creditably. Until the time that it relieved the 1st Guard Division, it had not yet participated as a front-line division in the Meuse-Argonne campaign; so it seems reasonable to consider it as having been a fresh division.

Each one of the three infantry regiments was composed of three battalions. The average strength of each battalion was about 600 men. In addition to the three battalions, each regiment had a machine-gun company, the average strength of which was about 120 men each, and a trench mortar com-

pany, the average strength of which was about 100 men each. Each regiment, therefore, totalled about 2000 men. While the numerical strength of the regiments of the 52d Division was much greater than those of the 5th Guard Division, only two regiments of the 52d Division, the 111th and 170th, were opposite to the American 2d Brigade, the numerical strength of which was also about 5500 officers and men.

(4) The 1st Guard Division was in Army and Group Reserve disposed as shown on Map No. 2. This division had just been relieved on the front line during the night of 30 September-1 October by the 52d Division after bearing the brunt of the American attack on 26 September and participating in the counterattack against the American 35th Division on 28 and 29 September. Its physical condition and state of morale at this time was even worse than that of the 5th Guard Division.

Throughout the war it had been rated as one of the best German shock divisions. During the last year of the war it had fought a great deal, and until the latter stages it had fought well. It had suffered severe losses, however, and finally, due to its lack of effectives, which it was found impossible to replace, its morale had greatly deteriorated and it had failed to measure up to its former reputation.

(5) *Army and group reserves.*—The German method of locating and employing army and group reserves in the defense at this time is worthy of note.

Reserves consisting of both infantry and artillery were portioned out and placed at strategical locations in the rear of each group by the army and in the rear of each division by the group. These forces were termed "counterattack groups," and the term well implies the purpose for which they were used in every case.

Where a counterattack group was placed by the army in the rear area of a group, or by the group in the rear area of a division, it apparently could, under ordinary circumstances, be used by the group or division in whose rear it was located when and where their respective commanders saw fit. In this situation, however, we find the use of the army counterattack groups by the group commanders restricted by the message of the Third Army, which states because of the limited number of reserves available they would be inserted

or moved only with the prior approval of Army Headquarters. Nothing in the records show that any such restriction was placed on the use of reserves of Group Argonne by the divisions.

The Third Army had located at Sommerance (see Map No. 2), as its counterattack group in the sector of Group Argonne, the 1st Foot Regiment, with three battalions of the 53d Reserve Division and one battalion of the 1st Guard Field Artillery Regiment, both of the 1st Guard Division, attached. Other army counterattack groups of the same strength were located at Marcq and Chevieres in the sectors of Groups Anne and Aisne, respectively, the other two groups of the Third Army located further to the west.

The German Fifth Army had located the entire 37th Infantry Division as one of its counterattack groups at Romagne (see Map No. 1), in the sector of the Group Meuse-West, which held the group sector adjacent to and just east of Group Argonne.

Group Argonne had in turn located the 2d and 3d Foot Regiments of the 1st Guard Division and the remainder of the 1st Guard Division Artillery at hill 272 as a sort of main counterattack group for the entire Tiefland subsector. The 1st Battalion 111th Regiment with one section of horse artillery and one battalion of the 169th Regiment with one section of horse artillery, all from the 52d Division, were located at Exermont and hill 269, respectively, as minor counterattack groups.*

Nothing can be found in any of the available records to show that any of the artillery attached to the counterattack groups either of the army or the groups was actively employed until the counterattack group itself was actively employed in making a counterattack. This may or may not have been done due to the lack of ammunition supply which was apparent throughout the operation.

OPERATIONS

1. 1 October to 3 October.—*a. Intelligence.*—Orders of the army, the group, and the divisions on 1, 2, and 3 October all warned of an immediate resumption of the American attack.

*While nothing in the available group records state such, it is believed that the latter two counterattack groups were so established because of the apparent ineffectiveness of the units of the 1st Guard Division.

These warnings were evidently based on the voluminous amount of information brought in or obtained by the intelligence agencies of all echelons. Either the German battlefield intelligence system functioned to a high degree of perfection or the Americans were unduly negligent in their efforts to prevent the Germans from obtaining information that clearly showed an impending attack of great magnitude. German intelligence reports for this period report the movements of long truck columns, troop columns, and troop and large tank concentrations in the rear areas of the American 1st Division. Artillery positions newly occupied seemed to be readily located.

Reports of 30 September and 1 October indicate that the Germans were well cognizant of the relief of the American 35th and 91st Divisions by the American 1st and 32d Divisions, respectively. A group order for 1 October states that "the American 35th and 28th Divisions have been relieved by divisions bearing the names of 'Iron Division' and 'Pershing's Pride,' a measure of the accomplishment of our troops." The evening report of Group Argonne on 2 October correctly states that the American divisions then in front of the group, from west to east, consisted of the 77th, 28th, 1st, and 32d Divisions and terms them as being amongst the best American attack divisions. Group evaluation of air reconnaissance reports caused the group also to conclude correctly that the American divisions being relieved were to remain closely in rear as reserves. Prisoners taken in the early morning of 1 October from all four infantry regiments of the 35th Division by the 5th Guard Division apparently furnished the Germans all the information desired concerning the relief that was made the night before on the front of the Tiefland subsector.

The ease with which intelligence information can be incorrectly evaluated and the danger resulting therefrom is shown by the noon report of Group Argonne of 3 October, which states that "information received indicates that because of the great reverse of the 29th (September) that the enemy had in morale" it was concluded that before he could resume his attack he "will first get his forces in hand." This conclusion was apparently based on the fact that while the attack had been expected momentarily for the past three days, it had failed to materialize up to the time that the report was issued; also certain information had been brought in by infan-

try patrols and other reconnaissance agencies of enemy entrenchments being constructed at several points along the group front east of the Aire River. Just how much this report detracted from the alertness of the divisions on the following morning, when the attack did come, can not be determined. That the attack was to come eventually was apparent by the announcement in the same report of a captured signal plan disclosing preparations for the installation of telephone lines via Fleville—Imecourt—Buzancy as far as Pierremont (see Map No. 1).

While warning the groups daily to be prepared for the impending American attack, the same optimistic spirit of assurance, as a result of the American inactivity on 1 and 2 October, seems to have crept into the headquarters of the Third Army. Entered in the war diary of the army on 3 October is the following statement: "Thanks to the offensive spirit that has been manifested by the troops to date on all sides, the initial success of the enemy has again been neutralized almost everywhere." Were this a message published to troops in orders, its sincerity could be questioned; however, the fact that it is entered in a document (which it is assumed records the actual sentiments of the commander and staff of the Third Army), it would appear reasonable to accept these sentiments as expressed in that document at their face value. Events of the past few days, as it will be seen later, in a way justified this conclusion, although it tends to show a total ignorance of the true condition of divisions such as the 1st and 5th Guard Divisions.

b. Reorganization and preparation for defense.—While army, group, and division orders for 1, 2, and 3 October all stress the need for being prepared for an impending resumption of the American attack, they also emphasize the great need for utilizing the time until it did come for the organization and strengthening of the new positions, and the effort to be made for raising the morale of the troops. Pioneer troops were sent forward to all divisions to assist in the organization of the new position. Army orders prohibited the use of these troops on combat missions. Orders of the group and divisions particularly emphasize plans for counterattacks and antitank defense. In both cases, these orders proved to be well warranted during the days that followed.

The antitank defense consisted chiefly of the attachment of an accompanying battery of light field artillery to each regiment of the 5th Division and each front-line battalion of the 52d Division. This attachment was made at the expense of the division light artillery. The wisdom of this will have to be judged in the conclusion of this analysis by weighing the results obtained in the tank attacks to come against the disadvantages of the lessening of the fire-power of the division artillery in normal artillery missions.

On 1 October, the Third Army ordered contacts between divisions to be made by officers. This order was issued because of the numerous penetrations that had been made by the enemy in the past few days directly on boundaries. This order proves of special interest because of the penetrations that were to be made up the Aire Valley, the boundary line between the 2d Landwehr Division and the 5th Guard Division during the operations of the next few days.

Apparently not holding the assurance for the future that was later gained by the inactivity of the enemy during the next three days, the group commander on 1 October issued an order which might be termed a preparation or a precaution in the event of a forced retirement. Zones of march were assigned to each division, and reconnaissance of roads and covering positions was to be made in each zone at once. March tables for the withdrawal march were to be prepared at once. The order even goes to the extent of stating what demolitions were to be made.

c. *Activities.*—All major attacks made by the enemy during 1-3 October were made west of the Aire River. After a day of inactivity along the entire group front, a strong hostile attack was launched on the morning of 2 October against the 2d Landwehr Division holding the Hochwald subsector west of the Aire River. By 7:30 AM a penetration was made on the right of the 2d Landwehr Division against the 122d Landwehr Regiment. However, the counterattack group of the 2d Landwehr Division promptly counterattacked and restored the main line of resistance.

Because the counterattack group of the 2d Landwehr Division had been consumed in this action, the group, after obtaining permission from the army, ordered the 1st Guard Regiment, with three battalions of the 53d Reserve Division

attached, and its attached artillery, all of which composed the Army Counterattack Group in the sector of Group Argonne, from Sommerance to a position on the Chatel—Bayern Ridge road between Bayern Ridge and the intersection of the north-south road with the Chatel—Bayern Ridge road. Here it was put at the disposal of the 2d Landwehr Division, thus indirectly weakening the Tiefland subsector. At noon the Americans renewed their attack against the Hochwald sector but were repulsed.

Activities on both sides of the front along the Tiefland subsector during 2 October consisted entirely of patrol activities.

On 1 October, after the American 1st Division had completed the relief of the 35th American Division, contact was lost with the enemy along the fronts of the 5th and 52d Divisions. Patrols were pushed forward by both divisions during the night of 1-2 October to regain this contact. At 6:45 AM on the morning of 2 October, strong combat patrols were pushed forward by the American 1st Division against the fronts of both the 5th and 52d Divisions. The 5th Guard Division reported that a patrol of 50 men attacked along the boundary between the 20th Regiment and the 3d Foot Guard Regiment which resulted in severe losses for the Americans, 22 prisoners (all members of the American 18th Infantry) being taken.

It is no wonder that the regiments of the 5th Division, whose companies in numerical strength in most cases consisted of less than one-half the strength of this one patrol, at first reported a general attack along their front. It should have given them, however, once the nature of the engagement was discovered, some idea of the avalanche which was to follow two days later.

Other large American patrols were able to penetrate up the Aire Valley during the day, operating against the right of the 5th Division, one even working up as far as Chehery, where it attacked an artillery observation post.

The patrol action of the early morning against the 52d Division was apparently of greater strength than that against the 5th Division. It was launched against the sector of the 170th Regiment and was led by two tanks. The tanks were promptly put out of action by the accompanying battery of the 170th Regiment and the attack repulsed with severe losses.

On 3 October all major activity in the group sector was again confined to west of the Aire. An American attack launched in the early morning succeeded in penetrating the extreme right of the 2d Landwehr Division. A counterattack, launched in conjunction with the left division of Group Aisne holding the sector on the right of that held by Group Argonne, resulted again in the restoration of the original main line of resistance and in cutting off, as reported by the 2d Landwehr Division, "about 2 American companies." Contact with the division on its right was promptly reestablished by the 2d Landwehr and plans were made for combined action of the two divisions "to capture or destroy the 2 American companies." These two American companies are now known to us as the "lost battalion" of the American 77th Division.

Orders were issued by the Third Army on this date for a voluntary retirement of the army's right wing. Group Argonne, however, was to hold its present position. Of particular interest in the retirement order is a statement that "ammunition will not be evacuated." Such an order in the face of the shortage of artillery ammunition that seems to have existed in Group Argonne a few days later seems unwarranted.

Infantry action against the Tiefland subsector on 3 October consisted of minor patrol action only.

Toward evening the entire front of the group became so quiet that a message was sent by the group to all divisions warning that the "momentary quiet of the enemy does not indicate weakness," and ordering "great alertness" during the night and the early morning of 4 October. Counterpreparation (called annihilation) fire was also ordered on all probable hostile assembly areas on the morning of 4 October. These orders were apparently the result of several troop and tank concentrations observed and reported during the late afternoon of 3 October and an unusually heavy air blockade along the American front.

Of special interest on this date, 3 October, and the eve of the resumption of the American attack, is an order issued by the commander of the division artillery which states that "no harassing or registration fire will be fired until 1½ days' supply is delivered to the firing positions." If such a shortage in artillery ammunition existed as this order would

indicate, how then was a counterpreparation fire of any great density on "all probable hostile assembly positions" to be fired as ordered by the group commander on the same day?

2. 4 October.—Shortly after midnight on the night of 3-4 October, the enemy made an assault against Tronsol Farm (see Map No. 2) in the sector of the 170th Regiment of the 52d Division and succeeded in capturing it. By seizing and holding this locality the Americans apparently hoped to assist the advance of the American 2d Brigade in the main attack to follow by outflanking the position of the 52d Division to the left. A prompt counterattack by the 1st Company 170th Infantry, however, succeeded in retaking the position.

At 5:15 AM the Americans opened up with a heavy drum fire from the Argonne Forest to the Meuse River. At 6:30 AM under the cover of a heavy fog a general attack was launched against the entire sector, Group Argonne. The 2d Landwehr Division still strongly entrenched in its position in the Argonne held fast.

A far different story was taking place, however, on the east side of the Aire River. Tiefland subsector was assaulted again and again in attacks heavily supported by tanks. Assisted by the heavy fog and completely escaping the German counterpreparation fire, the American 1st Brigade attacked the front held by the weakened 5th Guard Division, completely overrunning its small regiments. Attacked from the front and outflanked from the Aire Valley, the infantry of the 5th Guard Division was forced to evacuate Montrebeau Hill by 7:30 AM and by 8:45 AM had been forced to withdraw north of the Exermont Ravine under cover of the fire of the 1st Battalion 111th Infantry in group reserve just north of Exermont.

The advance of the Americans was so rapid on this front that at one time infantry of the 1st American Brigade came within 30 paces of the command post of the front-line battalion of the 3d Grenadier Guard Regiment, the battalion commander and his staff believing at the time that the attack had just started.

The 1st Battalion 122d Landwehr Regiment in division reserve north of Montrebeau Hill was ~~so~~ surprised by the rapidity of the advance that it found itself completely involved

in the defense of Montrebeau Hill before it had an opportunity to prepare for a counterattack.

Fog and hostile artillery fire had destroyed all means of communication, both to the front and rear, making it impossible for regimental commanders to communicate with either the brigade or the division headquarters.

On the front of the 3d Foot Guard Regiment the advance was so rapid and the fog so heavy that the Americans succeeded in reaching its front line before they could be seen. The front-line battalion of this regiment after being completely cut off succeeded in fighting its way to the rear, reaching the vicinity of Montrefagne with only about 20 men.

The first attack against the 52d Division was repulsed. The tanks heading the attack against the 169th Regiment were forced to retreat by the fire from the accompanying battery attached to the regiment.

The loss of Montrebeau Hill by the 5th Guard Division permitted the Americans to outflank the 111th Regiment from the Exermont Ravine with an enveloping attack with tanks, and by 9:30 AM both the 111th and 170th Regiments were forced to retire north of the ravine to a line: southern limits of Montrefagne-Neuviller Comte Farm, with severe losses.

At 10:00 AM the group commander released to the commander of the 5th Guard Division the counterattack group consisting of the 2d and 4th Foot Regiments, located on hill 272, for the purpose of making a counterattack along his entire front to recapture Montrebeau. The 3d Battalion 169th Regiment also in group reserve on hill 269 was to participate in this counterattack. This counterattack failed to materialize. It was later disclosed that the commander of the 5th Guard Division had arbitrarily taken over the 2d and 4th Foot Regiments earlier in the morning to assist in stemming the American advance north of Exermont Ravine and had already committed them when the order for the counterattack was received.

At 12:00 the command post of the 5th Guard Division was moved from St. Juvin to Verpel. Early on the morning of 4 October the army commander had arranged for the transfer and immediate movement of the 37th Division, then in 5th Army reserve in the vicinity of Romagne, to Group Argonne.

The 150th Regiment was to move to hill 272, the 151st Regiment to Husard Farm, and the 147th Regiment to Landres. Toward noon the 150th and 151st Regiments had begun to arrive at their destinations.

By 12:30 the 5th Guard Division, reinforced by the 2d and 4th Foot Regiments of the 1st Guard Division, was beginning to lose its hold on Montrefagne and by 3:00 PM had been driven north of Fleville and Montrefagne Hill.

The steady retirement of the 5th Guard Division north of Fleville and Montrefagne forced a withdrawal of the 52d Division to north of Montrefagne heights northeast of Exermont.

Anticipating the retirement of the 5th Guard Division and finding all of his reserves used up by noon except the 3d Battalion 169th Regiment still on hill 269, the group commander issued orders for a counterattack by the 150th and 151st Regiments of the 37th Division and the 3d Battalion 169th Regiment. The 151st Regiment was to counterattack against Fleville, and the 150th Regiment with the 3d Battalion attached against Montrefagne. These troops were placed under the orders of the commanding general 52d Division, who was to issue the detailed orders for the counterattack.*

The 147th Regiment was ordered to move to Sommerance as group reserve. The 1st Foot Regiment still in group reserve in the Argonne Forest which had been placed at the disposal of the 2d Landwehr Division on the day before, was ordered to move to St. Juvin to "a position in readiness."

At 12:50 AM the army commander ordered the 211th Regiment with a battalion of light artillery, both of the 45th Reserve Division, at that time located in the sector of Group Aisne on the right of Group Argonne, to Sommerance by trucks as a new army reserve for Group Argonne.

The counterattack ordered by the group was launched at about 4:00 PM and by 6:00 PM had succeeded in recapturing Fleville and Montrefagne. By dark the 150th and 151st Regiments held a line south of Fleville and Montrefagne in the order named and greatly mixed with units of the 5th Division, the 2d and 4th Foot Regiments of the 1st Guard Division, and the 1st Battalion of the 122d Regiment of the

*The order for this counterattack can not be found in any of the available records.

2d Landwehr Division. The 147th Infantry had reached a vicinity just west of Sommerance and was being held there in group reserve.

Shortly after dark the group issued an order for the relief of the 5th Guard Division by the 37th Division, the relief to be made under the orders of the 5th Guard Division. The present front line was to be held and improved by "assault advances." All units of the 2d and 4th Foot Regiments of the 1st Guard Division, together with their attached artillery, were to be withdrawn and assembled with the remainder of the division then in group reserve at St. Juvin, in army reserve around Briquenay—le Morthomme—Beffu, north of the Argonne Forest. Withdrawals of these units were to be made only as far as the regiments of the 37th Division could occupy the sector of the 5th Guard Division with the assurance that no gaps would exist. Regiments of the 37th Division were to be put in position by staff officers of the 5th Guard Division. The 147th Regiment with one battery of horse artillery was to be "disposed in a position of readiness on hill 272 under group orders."

The same order also included the following: The 37th and 52d Divisions were instructed to provide their "own strong reserve from their assigned regiments." The 52d Division was instructed to "dispose" one battalion of infantry and one section of horse artillery on hill 269. The 2d Landwehr Division was instructed to protect its left flank and prevent the enemy from "*advancing east of the Aire by ample (enfilade) artillery and infantry fire.*" It was also to reconnoiter the Aire River as to its fordability for a flank attack to the east from the Argonne.

Late on 4 October the group commander submitted an estimate of the situation to the army commander in which he reports that there was at that time opposite the group: two elite divisions, the American 1st and 32d; three good average divisions, the 77th, 82d, and 91st; and strong reserves in readiness.

Assuming that the group commander knew the approximate strength of the American infantry division, we can not help but wonder what his thoughts and emotions were as to the hopes of days to come when he included in the same estimate the following "battle value" of his own divisions:

2d Landwehr: still effective despite losses as well as fatigue.

5th Guard: completely exhausted and no longer effective.

52d Division: displays excellent fighting qualities.

1st Guard: exhausted. Needs replacements to strengthen and 4 weeks' training in rear.

An interesting feature of the attack on 4 October was the effective use of the accompanying battery against the American tank attacks.

The evening report of Group Argonne this date lists the following American tanks accounted for:

8th Battery 104th Field Artillery.....	5
69th Minnenwerfer Company.....	1
4th Battery 4th Guard Field Artillery.....	6
1st Battery 4th Guard Field Artillery.....	4
	—
Total.....	16

3. 5 October.—For the disposition of troops, the front line, and new boundaries of the Tiefland subsector as of the morning of 5 October, see Map No. 2.

The relief of the 5th Guard Division by the 37th Division was completed early on the morning of 5 October, but at daylight the command of the sector was still under the commanding general of the 5th Guard Division. The actual transfer of the command was not made until 11:00 AM, well after hostilities of the day had commenced. The command posts of both divisions, however, were located at Verpel.

The battle order of the 37th Division seems to have been somewhat mixed, due probably to the confusion of the night before. The 151st Regiment was on the right with two of its battalions at Fleville, then two battalions of the 150th Regiment, then the other battalion of the 151st Regiment. One battalion of the 150th Regiment was behind hill 272 out of the division sector in division reserve.

The 37th Division had always been considered a first-class shock division. One of its regiments, the 147th, bore the name of "The Marshal von Hindenburg Regiment." Until 4 October it had not actively participated against the

American attack on the Meuse—Argonne front, so it can be considered as having been a fresh division. The division at this time was commanded by Lieutenant General von Eberhardt.

The strength of the 151st Regiment at this time amounted to 99 officers and 2363 men, this one regiment alone being some 800 men stronger than the entire 5th Guard Division was before the attack of 4 October. Nothing exists in the available records of this division to show the numerical strength of the other two infantry regiments, the 150th and 147th. It would seem reasonable to believe, however, that their numerical strength would approximate that of the 151st Infantry; in which event the 1st Division found its way blocked with a far stronger force in its attacks of the next few days than was the case on 4 October.

Before the relief had been completed and the units of the 1st Guard Division assembled, Third Army ordered the 1st Guard Division to relieve the entire 45th Reserve Division in the Group Aisne sector. After being relieved, the 45th Division was to assemble as the army counterattack group in rear of Group Argonne. This action was taken, apparently, because of the more favorable situation that existed west of the Aisne where heavy attacks by the French in that locality had been successfully repulsed.

After a fairly quiet night along the entire group front, new and heavy attacks, again assisted by a heavy fog, were launched against the Tiefland subsector for possession of Montrefagne Hill.

Not until 10:30 AM was an attack made against the 2d Landwehr Division. This attack was again repulsed with heavy losses to the Americans.

Taking advantage of a very heavy fog in the deep ravine leading up the east side of Montrefagne Hill, the Americans by 9:00 AM had penetrated east and west of the hill and almost succeeded in cutting off the 3d Battalion of the 150th Infantry. This battalion after heavy fighting to its rear cut its way through on order from the regimental commander, leaving Montrefagne in the possession of the Americans at about noon. While the 151st Infantry still held a line along the southern limits of Fleville, the 150th Regiment with a

battalion of the 151st Regiment on its left had fallen back to the southern edge of hill 272.

At 10:55 AM the division ordered the 1st Battalion 150th Infantry, the division reserve, to counterattack against the hostile penetration west of Montrefagne between the 151st and 150th Regiments. This counterattack encountered a strong American attack just before it was launched and so was stopped before it started.

Outflanked by the hostile penetration up the deep ravine west of Montrefagne and the subsequent withdrawal of the left of the 37th Division, the 52d Division was forced to withdraw to the line: hill 272—hill 269. Late in the afternoon the division ordered the 147th Regiment, less one battalion, to counterattack against Montrefagne. Both the 37th Division and the 52d Division were to join in the attack. The time for the counterattack was set for 5:15 PM and the enemy was to be driven back across the Exermont Ravine.

Again a strong American attack, this time against hill 272, prevented the counterattack, and at 5:40 PM it was postponed. The group ordered the 1st Battalion 147th Infantry to fill the gap between the 37th and 52d Divisions that had resulted from the penetration there in the morning. At dark the front line of the Tiefland subsector was as shown on Map No. 2.

In the midst of operations during the day, Group Argonne was transferred from the command of the Third Army to the command of the Fifth Army, making the group the right wing of the Fifth Army. With it were transferred all artillery and other troops then attached to Group Argonne. Also transferred and definitely assigned to Group Argonne was the 45th Reserve Division which earlier in the day had been ordered relieved by the 1st Guard Division, at the time en route from Group Aisne.

The 45th Reserve Division had been considered a second-class division. Early in September it had received replacements from the 222d Division, which had been disbanded and had also been considered a second-class division.

In June, 1918, two regiments of the 222d Division had threatened to leave the trenches if not relieved. This mutinous spirit was apparently carried to the ranks of the 45th Reserve Division and was undoubtedly responsible for the mutiny of

the 45th Division late in October. Under these circumstances the degree of effectiveness of this division at the time must have been low. Having just been relieved from the front line, it was not a fresh division.

During the day the Fifth Army issued orders for the moving of certain army reserves to the west in rear of Group Argonne. These reserves included the 41st Reserve Division which was ordered to Landres.

Of particular interest to Americans is a Third Army estimate of the situation written on the night of 5 October and signed by General von Einem. It lays the pause of 5 October to the "limited operative mobility of the Americans." It further states that the Americans can be expected to continue "to smash our front by increasing blows without regard to his losses"; that "the enemy still has ample forces at his disposal for the continuation of the attacks."

In summarizing the German forces it states that "the effectiveness of the divisions has diminished proportionately due to the continuous attacks against limited forces and these lacking rest"; that "judging from experiences up to this time, each day at least one division has to be withdrawn as no longer effective for defensive action."

This estimate is undoubtedly a correct analysis both of his opponent's and his own forces written by a master tactician commanding an exhausted and worn out army, who was making a remarkable stand due almost entirely to a most superior leadership that apparently existed at that time throughout his entire army.

4. 6 October.—During the night 5-6 October the group ordered six companies of the 122d Landwehr Regiment of the 2d Landwehr Division to the ravine running west of Sommerance where they were placed at the disposal of the 37th Division. The 211th and 212th Reserve Regiments, the only two regiments of the 45th Reserve Division that had arrived by daylight on 6 October, had been placed along the road running east of Sommerance as the counterattack group.

No attacks were made during the day against the Hochwald subsector; however, strong American patrols were constantly attempting to work up the Aire Valley and operate against the left and right flanks of the 2d Landwehr and 37th Divisions respectively.

Attacks against the Tiefland subsector were spasmodic, entirely of a local nature and all without artillery preparation, but some were supported by tank action.

The first attack of the day was launched about 7:00 AM against hill 272 and was promptly repulsed. At about 2:00 PM another attack was launched against hill 269, followed shortly afterward by another attack against the eastern side of hill 272.

Seeing evidence of a general retreat from both hills 272 and 269, the regimental commanders of the 212th and 211th Regiments both seem to have spontaneously and voluntarily launched counterattacks, the 212th Regiment against hill 272 and the 211th Regiment against hill 269, repulsing the American attacks against both of these hills. Statements from prisoners taken in these two attacks informed the Germans of contemplated new general attacks in the Aire Valley on both sides of the Aire River.

Earlier in the day the Fifth Army ordered the group to plan a counterattack using all three infantry regiments of the 45th Reserve Division for the purpose of regaining the line: Gesnes—Exermont. This counterattack was never executed because of the unfavorable artillery ammunition situation existing at this time.

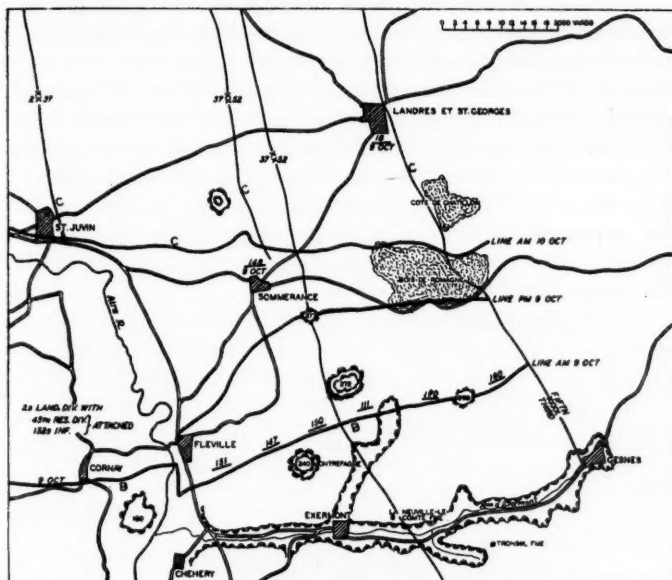
By dark all lines of the group were approximately the same as the night before (see Map No. 2).

At 6:00 PM units of the 41st Reserve Division had begun to arrive by train at Landres.

During the day the Fifth Army issued an order to Group Argonne designating the "Brunhild" position in the group sector at the "Kriemhild" position. This position was located on a line along the northern bank of the Aire River from the Bois des Loges to St. Juvin, thence east along the high ground north of Sommerance (see Maps Nos. 1, 2, and 3). The group was instructed to take over the construction of this position. Certain pioneer troops were attached to the group for this work.

5. 7 October.—During the night of 6-7 October the 3d Regiment of the 45th Reserve Division, the 210th Infantry arrived at Sommerance. Also during the night and throughout the day of 7 October, the 41st Reserve Division continued to arrive at Landres.

Upon orders received from Fifth Army, Group Argonne had ordered the 2d Landwehr Division to retire south to the line: hill 180—Chatel—hill 244, thence to the southwest. This withdrawal was effected during the night of 6-7 October and had been closely followed up by the Americans.



Map No. 3

By 9:00 AM expected American attacks along the front of Group Argonne had failed to materialize. At 11:00 AM the Fifth Army issued an order which stated that barring any serious change in the situation, the 41st Reserve Division, still detraining at Landres, would make a counterattack in the direction of Exermont on 8 October. Preparations for this counterattack were to be made at once. Plans for the counterattack were made up and submitted to the army by Group Argonne.

At 10:00 AM a strong attack was launched against the 2d Landwehr Division in which the Americans succeeded in making material advances along the entire division front. The American advance, gaining momentum rapidly, captured hill

244 and the town of Chatel by 12:00 noon. By 1:00 PM the Americans had also captured hill 180.

At 10:40 AM the group had ordered the 210th Regiment from Sommerance and placed it at the disposal of the 2d Landwehr Division.

Further advance by the Americans beyond hill 180 was prevented by enfilading machine-gun fire from the 151st Infantry south of Fleville and the artillery fire of the 37th Division Artillery east of the Aire River. Apparently for the purpose of eliminating the source of this enfilade fire on the west bank of the Aire, an assembly of considerable strength for an attack was observed in the ravine about one mile south of Fleville at about 2:00 PM. Counterpreparation fire on this ravine was requested by the 151st Regiment, and the attack was broken up, forcing a withdrawal to the south from the ravine with many wounded being carried.

A counterattack launched by the 125th Landwehr Regiment late in the afternoon recaptured hill 244 and Chatel, but hill 180 remained in the hands of the Americans.

At 11:00 PM the Fifth Army countermanded its previous order for a counterattack by the 41st Reserve Division and directed the disposition of reserves as follows:

45th Division less 211th Regiment: rear of 2d Landwehr Division.

1/3 of 41st Division: north of hill 272.

1/3 of 41st Division: Fontein Farm.

1/3 of 41st Division: remain at Landres.

6. 8 October.—Early on the morning of 8 October the Americans attacking from the south and east continued their efforts against the 2d Landwehr Division. They succeeded again in advancing their lines to hill 244—Chatel and southwest of Cornay in spite of reinforcement of the 210th and 212th Regiments of the 45th Reserve Division and the enfilading machine-gun and artillery fire from the 37th Division east of the Aire. A counterattack against this success was not attempted, as the group considered the only available forces, the 210th and 212th Regiments, insufficient for the purpose.

At 4:00 PM Group Argonne received an order from the Fifth Army to withdraw the 2d Landwehr Division again,

this time to the line: Bois de Marcq—Cornay during the night of 8-9 October.

Operations east of the Aire River in the Tiefland subsector were confined to patrol attacks in the late hours of the afternoon against the sector of the 169th Regiment and hill 269. Both attacks were repulsed.

During the day the 5th Guard Division, still located at St. Juvin where it had been reorganized as a single reinforced regiment, was ordered to Stenay in the sector of Meuse—West.

During the day the group in compliance with orders received from the Fifth Army had moved units of the 41st Division from the detraining area at Landres as follows:

152d Infantry to Bois de Marcq.

18th Infantry still at Landres.

148th Infantry east of Sommerance.

All three of these regiments were held as group reserves.

The 211th Infantry of the 45th Reserve Division, units of which were intermingled with the front-line units of the 52d Division, was moved west of the Aire River during the night of 8 October in contemplation of a relief of the 2d Landwehr Division by the entire 45th Division.

7. 9 October.—For troop dispositions at daylight, 9 October, see Map No. 3.

In accordance with orders issued on the afternoon of 8 October the 2d Landwehr Division withdrew during the night of 8-9 October to the line: Bois de Marcq—Cornay.

From dawn until 9:30 AM the Americans fired a heavy artillery preparation along the entire front of the group. At 9:30 AM a general attack was launched against both the Hochwald and Tiefland subsectors.

Repeated heavy attacks against Cornay were repulsed, during which considerable house to house fighting took place. In this fighting 2 officers and 164 men (Americans) were taken prisoners. The 125th Landwehr Regiment of the 2d Landwehr Division, the 212th Reserve Regiment of the 45th Reserve Division, and the 152d Regiment of the 41st Reserve Division were all used in repulsing the attacks against Cornay.

In the sector of the 37th Division strong attacks along the entire division front made considerable headway. By

10:00 AM the Americans had captured Fleville. Attacks on both sides of hill 272 were making progress.

The 1st Battalion 151st Infantry Regiment, in division reserve, located in the wooded area south of Sommerance, was ordered to counterattack against the western slopes of hill 272. This counterattack appears to have been very effectively supported by artillery fire, as most reports seem to indicate that the attack on the west side of hill 272 was stopped due more to the artillery fire than to the counterattack.

The attack on the east, however, in the sector of the 52d Division continued to gain, and by 11:30 AM a penetration had been made between the 111th Regiment and the 170th Regiment by an American force which was beginning to advance on hill 277.

Earlier in the morning the group had ordered the 148th Infantry from Sommerance to hill 277, and at 11:30 AM it was still en route.

The 170th Regiment and the 169th Regiment of the 52d Division located on the west and east slopes of hill 269 had succeeded in holding their positions at noon. The position on hill 269 at this time was becoming precarious due to the penetration between the 111th Regiment and the 170th Regiment and the steady retreat of the 109th Regiment in the sector of Group Meuse-West to the immediate east.

By noon it appears that all reserves of the divisions and the group had been inserted except the 18th Regiment of the 41st Reserve Division, which was in march from Landres to the Bois de Romagne under orders of the Fifth Army, apparently to be used in the sector of Group Meuse-West.

At noon the group commander, Lieutenant General von Kleist, issued a confidential order to all the division commanders, which demonstrates how serious he viewed the situation at the time. He stated that "the gravity of the situation demands the concerted collection of all forces; the expenditure of the last effort of all officers and men to prevent the slacking of discipline and sinking of morale. *Otherwise catastrophe.*"

In the same message he cites the hero of East Africa, General von Lettow-Vorbeck, as an example of how "to master a desperate situation and regain the offensive without reinforcements."

At 2:00 PM the 151st Regiment of the 37th Division was still holding the front between Fleville and the west slope of hill 272. The 147th and 150th Regiments, also of the 37th Division, and the 111th Regiment of the 52d Division had been forced to evacuate hill 272 by the strong penetration up the draw on the east side of the hill. The American troops making this penetration, assisted by those which quickly followed up the withdrawal from hill 272, began an assault against hill 277. The 148th Infantry of the 41st Reserve Division which had arrived at hill 277 was ordered to counter-attack and retake hill 272. For some reason that can not be determined from the records, this counterattack does not appear to have been made, the regiment instead becoming involved in the defense of hill 277. By 5:00 PM hill 277 was captured after serious fighting.

Due to the gains of the enemy on both sides of hill 269, the 52d Division ordered the 170th and 169th Regiments to withdraw early in the afternoon to the southern edge of the Bois de Romagne. By dark the withdrawal had been effected and contact reestablished with the 111th Regiment just east of hill 277.

Shortly after 5:00 PM the Fifth Army issued an order for Group Argonne to retire during the night of 9-10 October to the Brunhild-Kriemhild position, which the army had ordered the group to organize on 6 October. Immediately after dark the withdrawal was started. Actual orders covering the withdrawal were not issued until 11:45 PM. The main line of resistance of the new position was along the north bank of the Aire River from the Bois des Loges to St. Juvin, thence along the southern slopes of the hill just south of St. Georges and Cote de Chatillon. The new troop dispositions and new boundaries as prescribed in the group order for the retirement were as shown on Map No. 3.

The 2d Landwehr Division with the units of the 45th Reserve Division attached was to withdraw early in the evening of 9-10 October, leaving weak rear guards to veil the movement. Bridges across the Aire still intact were to be destroyed.

The 37th Division after first covering the withdrawal of the 2d Landwehr Division was to retire to its new position in time to complete the movement by 5:00 AM.

The 52d Division with the 18th and 148th Regiments of the 41st Reserve Division attached was to complete its withdrawal to the new position also by 5:00 AM, 10 October, and was to establish contact with the 115th Division on the left.

The following units were to be held in readiness as group reserves at 5:00 AM on 10 October:

The 152d Regiment with one battery of field artillery just northeast of St. Juvin.

One battalion of field artillery of the 37th Division in the position in observation southwest of Imecourt. The batteries, however, were placed at the disposal of the 37th Division for the "utilization of their fire-power."

The 2d Landwehr was instructed "to designate and locate its own strong reserves near Champignuelle; likewise the 52d Division in the region north of Laudres and north of Romagne woods."

8. 10-11 October.—The retirement of the entire group front was effected on the night of 9-10 October most successfully and without interference from the Americans.

The retirement of the 2d Landwehr across the Aire River apparently was not discovered by the Americans before early morning of 11 October. All during the day of 10 October and part of the night the American artillery continued to shell the old positions south of the Aire.

Not until early morning of 11 October did the Americans start feeling toward the Aire and attempt to cross it with patrols. Infantry activity in front of the sectors of the 37th and 52d Divisions on 10 October was confined entirely to patrol actions in which the Americans felt their way forward cautiously in an attempt to develop the new position.

All records indicate that 10 October was the first really quiet day since 4 October. For the German infantry, however, this did not mean that the much needed rest was at hand. Group headquarters issued an order early on the morning of 10 October which stated that "organization of the position occupied will be pursued with the employment of all forces."

During the day of 10 October command of the sector of the 52d Division was transferred to the 41st Reserve Division. No actual relief of troops appears to have been made. Troops of both the divisions concerned apparently remained in the lines.

Likewise during 11 October command of the sector of the 2d Landwehr was transferred to the 45th Reserve Division without the relief of troops.

Activity along the group front on 11 October was again limited to patrol action as on 10 October. One strong American patrol attacked the front of the 151st Regiment in the sector of 37th Division, apparently in an effort to develop its new position. The attack was repulsed and 14 prisoners were taken.

During the night 11-12 October the American 1st Division was relieved.

CONCLUSIONS

Considering the circumstances under which the German forces on this front were fighting, it is believed that the system of defense used by them was a sound one. That it was passive in nature was due to circumstances over which these units had no control.

In July, 1918, the German High Command had been forced to surrender the offensive on all fronts. By October, 1918, the entire German Army in France was engaged in but one type of military operation, that of trying to hold on to what French territory was then in their possession.

From a study of the different plans for the employment of the limited forces available, it is quite evident that the German higher commanders and their staffs had become, at this stage of the war, past masters as military tacticians.

Their plans for defense embodied all the important means which should be employed in defensive combat. The innumerable and strategically located so-called "Counterattack Groups" of infantry, always reinforced with artillery, were intended to provide those essential means that must be included in any good system of defense; namely, movement and fire-power, shock-action, and surprise. Their plans seem to have truly called for a "mobile defense."

In every instance the defense lines chosen made the maximum use of the natural and artificial features of the terrain. Whenever driven from one of the positions, no hesitancy was ever shown in ordering a withdrawal to the next position in rear that offered the best features for defense. These withdrawals, always a difficult operation, were in every instance masterfully executed.

Why, then, with such superior leadership were these German units forced to steadily give ground to the attacks of the Americans who were not nearly so well led? The answer lies in two important factors that must always be considered when comparing the relative value of two military forces; namely, combat efficiency and numerical strength.

That the German forces opposed to the 1st American Division during the period covered by these operations were superior in training it is believed goes without saying.

The divisions concerned were, in most cases, regular divisions, all of which, up until 1918, had enviable records. Their commissioned and noncommissioned personnel, generally speaking, were products of what had been at the outbreak of the war in 1914 the world's most efficient fighting machine; and at this time all had been thoroughly trained in the principles of war and their application by the greatest of all military teachers, war itself.

What, however, would appear to be a tremendous advantage from the start seems to have been offset by a great lack of that quality that the personnel of any military force must possess to win battles: a will to win and a high degree of morale.

That the rank and file of the lower German units had reached a low degree of morale and had lost the will to win seems most evident throughout the entire period of operations.

Coupled with this fact, we find German units all very much under strength and greatly overextended. The outstanding example of this is the 5th Guard Division, which was allowed to remain in the front line until after the American attack of 4 October. This is the one great criticism that can be made of the German higher commanders. It seems reasonable after a study of these operations to conclude that had the 5th Guard Division been relieved by the 37th Division before, instead of after the attack of 4 October when the American advance had gained its momentum through the failure and inability of the 5th Guard Division to hold, the success of the American 1st Division, in the initial attack at least, would not have been so pronounced.

In comparing these German units to the American 1st Division and its adjacent units we find some interesting contrasts:

From our own knowledge of ourselves we must admit that regardless of what division we might have fought with in France, the commissioned and enlisted personnel of the American Army at this time were inferior in training to that of the German Army. What the Americans did possess, however, was a high state of morale and an indomitable will to win the war. This quality was especially pronounced at this time in the rank and file of the American 1st Division.

From the point of view of numerical strength, the Americans had what proved to be overwhelming numbers, which permitted units to attack on narrow fronts and in great depth.

The attack of the 26th and 28th Infantries of the American 2d Brigade, each containing approximately 2500 officers and men, on 4 October was on fronts ranging from 1000 to 1200 yards, a great contrast to the weakly held and overextended fronts of the German units to which the 1st Division was opposed.

The one outstanding conclusion or lesson that can be drawn from this study is that regardless of how high a degree of training a military force may possess, it must have a high morale and sufficient numbers in order to win battles against another military force which has that high degree of morale and is overwhelming in numerical strength, even though it be inferior in training.

APPENDIX

1st Guard Division:

- 1st Guard Infantry Brigade
 - 1st Foot Infantry Regiment
 - 2d Foot Infantry Regiment
 - 3d Foot Infantry Regiment
- 1st Guard Artillery Command
 - 1st Guard Field Artillery Regiment
 - 1st Detachment Light Guard Field Artillery
(1st, 2d, and 4th Batteries)

37th Division:

- 73d Infantry Brigade
 - 147th Infantry Regiment
 - 150th Infantry Regiment
 - 151st Infantry Regiment
- 37th Artillery Command
 - 73d Field Artillery Regiment
 - 2d Detachment 16th Foot Artillery Regiment
(2d, 9th, and 10th Batteries)

2d Landwehr Division:

- 54th Land Infantry Brigade
 - 120th Land Infantry Regiment
 - 122d Land Infantry Regiment
 - 125th Land Infantry Regiment
- 2d Land Field Artillery Regiment

41st Division:

- 74th Infantry Brigade
 - 18th Infantry Regiment
 - 148th Infantry Regiment
 - 152d Infantry Regiment
- 41st Artillery Command
 - 79th Field Artillery Regiment
 - 2d Detachment 15th Foot Artillery Regiment
(5th, 7th, and 8th Batteries)

5th Guard Division:

- 2d Guard Infantry Brigade
 - 3d Foot Infantry Regiment
 - 3d Grenade Infantry Reserve
 - 20th Infantry Regiment
- 5th Guard Artillery Command
 - 4th Guard Field Artillery Regiment
 - 1st Detachment 1st Guard Reserve
Foot Artillery Regiment

45th Reserve Division:

- 90th Reserve Infantry Brigade
 - 210th Reserve Infantry Regiment
 - 211th Reserve Infantry Regiment
 - 212th Reserve Infantry Regiment
- 45th Reserve Field Artillery Regiment
 - 1st Detachment 20th Foot Artillery Regiment
(1st, 2d, and 4th Batteries)

52d Division:

- 56th Infantry Brigade
 - 111th Infantry Regiment
 - 169th Infantry Regiment
 - 170th Infantry Regiment
- 52d Artillery Command
 - 104th Field Artillery Regiment
 - 84th Foot Artillery Battalion
(1st, 2d, and 3d Batteries).

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Section 2

ABSTRACTS OF FOREIGN-LANGUAGE ARTICLES

This section contains abstracts of important articles from foreign military periodicals; the remaining articles for each magazine are listed in Section 4.

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THE RUSSO-POLISH WAR, 1919-1920 NONCRITICAL AND CRITICAL VIEWS*

(PART III)

By Major G.J. Braun, Infantry

III.—THE ADVANCE OF THE RUSSIANS OVER THE BUG RIVER (BEGINNING OF JULY—6 AUGUST, 1920)

The Situation on the White Russian Front During the Latter Half of June

(See Sketch No. 10.)

Following the failure of the first Russian offensive in the northern front sector, the Polish counteroffensive reached the line as shown on Sketch No. 10. The condition of the troops and the acute situation on the Ukrainian front prevented a continued advance. In the meantime the Russians had captured Kiev and by the end of June had reached Ubert and Goryn, thereby compelling the Group Polesie to withdraw.

In the meantime, during the latter half of June, quiet prevailed on the north front from Bobrujsk to the Düna River.

The Poles utilized this period to reorganize their positions, train their reserves, and assign the replacements (42

*See RML No. 52, page 43, and RML No. 55, page 43, for previous installments of this series.

Abstracted from *Militärwissenschaftliche Mitteilungen*, February, 1935. "Der russisch-polnische Krieg 1919-1920. Unkritische und kritische Betrachtungen," by Colonel Alfred von Wittich.

officers and 10,000 men). In spite of this, it was only possible to fill units to about half the required strength because innumerable deserters circulated about the rear areas. Also the north front had been weakened by the withdrawal of forces (2½ divisions by the end of June) to the Ukranian front; this in spite of the fact that the Polish intelligence service was aware of the steady strengthening of the Russian front on either side of Polozk, indicating preparation for a major offensive. Just as critical as the weakening of the Polish main front may appear, on the other hand it was just as comprehensible for Pilsudski in these days to look toward Wolhynia with great anxiety where the fall of Rownos would endanger the vital lateral communications.

On 28 June, General Stanislaus Haller, the Chief of Staff of commander-in-chief, requested General Count Szeptycki, the commander of the northern front, to withdraw to the vicinity of the German permanent position of 1917-18. The withdrawal did not take place, because on 2 July Pilsudski called a council of war at Warsaw, which was attended by Szeptycki, and no definite decisions resulted.

The frustration of the initial Russian attack on the north in no way altered their original plan of campaign. Even though the operations in the Ukraine made favorable progress, it was decided that the main blow must be struck in the north. All the troops and war matériel that Russia could collect were therefore placed at the disposal of Tuchatschewskij to be utilized for the decisive blow at the heart of Poland. "The fate of the world revolution will be decided in the West; the road to general world destruction lies over the corpse of Poland. Forward to Wilna, Minsk, and Warsaw." These were the words used in the daily order of Tuchatschewskij on 2 July. (See Sketch No. 10 for comparative strength and situation as of 2 July.)

In judging the following military events it must be noted that in Wolhynia both sides were comparatively equal: (Polish: 9 infantry divisions and 5 cavalry brigades. Russian: 7-8 infantry divisions and 5-6 cavalry divisions) whereas, on the White Russian—Lithuanian front the Russians had almost double the strength: The Polish had exactly 13 infantry divisions with a few squadrons of cavalry (100,000-120,000 men),

opposed by the Russian 20-21 infantry divisions and 2 cavalry divisions (200,000-220,000 men).

*The Beginning of the Second Russian Offensive in the North
(4-11 July)*

The Russians used the same plans for the second offensive as they had used for the first: Attacking the over-extended Polish front by enveloping and destroying the hostile north flank by the Russian main forces.

The cavalry corps was assigned to the envelopment with instructions to permit the engaged troops no rest and wherever possible, force them to the south. The Russians held to this tenaciously because of its simplicity and former successful experience.

The Red troops energetically forced their attack since 1 July. Reconnaissance planes circled over the Polish First Army. The Polish Fourth Army reported hostile preparation for a river crossing. In addition to this, Minsk was subjected to aerial bombing.

The Russian offensive started at dawn of 4 July. Following heavy artillery preparation the infantry advanced, accompanied by tanks and armored cars. The Russian main attack, consisting of 12½ infantry and 2 cavalry divisions of the Fourth, Fifteenth, and Third Armies and the III Cavalry Corps, was directed against the 5½ divisions of the Polish First Army whose morale was not so good. At this decisive location the Russians utilized 80,000 rifles (sabers) in addition to 440 field pieces against 35,000 rifles and 140 field pieces of the Poles.

Tactically the Red troops followed the principle of concentrating their forces, for on the north flank and in the center of Zygodowicz's army they attacked with overwhelming strength. The Poles, who had but 1½ divisions in reserve, could not withstand this double attack. As early as the night of 4-5 July, during which the Russians pressed their attack, the Polish First Army, suffering heavy casualties, was forced back 10 to 15 miles. Simultaneously the Polish Fourth Army became heavily engaged by attacks on Borisow and Bobrujsk. Under these circumstances at noon, 5 July, the army commander, General Szeptycki, ordered the withdrawal of his north flank to the line along Budslaw—Miadziol. On

the same day the Polish Army Headquarters ordered the retaking of the north front as far as the former German position by absolute retention of Wilna and Pinsk, but it was left to General Szeptycki to designate the time for this movement.

On 6 July the commanding general of front-line troops realized that he must carry out this delayed order, as the retreat of the Polish First Army was becoming more disorderly. In many cases the commanders were separated from their troops. Men fleeing from the front arrived as far back as Swencjany, in fact, as far as Wilna, and created a feeling of panic.

While the Polish First Army was withdrawing its north flank on Kobylnik and the center and south flanks dropped back toward Molodeczno, the Russian III Cavalry Corps followed closely and occupied Swencjany on 9 July.

During the night 6-7 July, the Russian Sixteenth Army captured the entire Berezina River line.

On 10 July the Poles reached the Wilja River as well as the line: Wilejka—Minsk while the Red forces increased their pressure along the line: Dünaburg Railroad—Wilna—Borisow—Minsk. During these days the hostile pursuit, especially against the Polish First Army, greatly diminished due to the hostility of the populace and the swampy terrain.

On 11 July the Russians occupied Molodeczno and Minsk.

In the meantime, on 9 July, the Polish high command decided to halt the retreat along the line: Zbrucz—Styr—Luniniec—the old German positions and to launch “a strong counteroffensive on the entire front” from this line.

*The Advance of the Russians Up to the Njemen and Szczara
and the Entry of Europe (12-20 July)*

(See Sketches Nos. 11, 12, and 14.)

On 12 and 13 July the Polish forces were grouped as shown in Sketch No. 11. The badly demoralized First Army in its new location released $2\frac{1}{2}$ divisions as reserves. Its combat strength had diminished to 15,800 rifles and 300 sabers; in 8 days it had suffered a loss of more than half its strength. The Fourth Army, which by forced marches withdrew to the former permanent German position, and the Group Polesie, had not suffered in their combat strength.

On 12 July the Russians resumed their combat activities but were unable to make any noteworthy gains on this date or on 13 July. They did succeed on 14 July to penetrate the Polish First Army at Smorgon and south thereof and with their Lithuanian allies, capture Wilna.

It was now impossible for the First Army to stem its retreat. Due to hostile pressure General Zygdalowiez withdrew to the southwest during the night of 15 July.

The high command then ordered a new concentration of troops in the strong but narrower sector of Grodno-Pinsk. General Szeptycki accordingly issued orders for the Polish First Army to halt behind the Njemen River from Grodno (inclusive) to the junction of the Szczara River and for the Polish Fourth Army to halt behind the Szczara River while the Group Polesie was to make a stand along the Oginski Canal and Pinsk.

The disastrous military events of the early July days compelled the Polish government to appeal to the Allies, especially Great Britain, for help and intervention against the Soviets. On 10 July at Spaa, where the Allied Supreme Council sat, an agreement was reached between the Polish Premier Grabski and Great Britain's representative, Lord Curzon. On 11 July England presented to the Soviet ambassador at London, Krassin, the request that Moscow call an immediate one-week armistice. The British suggestion called for the withdrawal of the Polish forces behind the so-called "Curzon Line" [along the general line: Lemberg—Grodno (see Sketch No. 14)], and for the Russians to halt their advance about 30 miles east of that line, and that Wilna be turned over to the Lithuanians.

Luck was with the hard pressed Poles, because the Soviets, who had received the British proposals on 12 July, were sure of victory and therefore turned down the armistice proposals. It was not until 18 July that Moscow notified London by wireless that it would not consider intervention but would consider direct negotiations with the Poles. At the same time the Soviet Supreme War Council decided to relentlessly push the operations to counteract the possibility of Rumania's entry into the war. After 18 July the Poles were faced with direct negotiations with the Russians, a doubtful help from

other countries—and above all their forces would have to be taxed to their extreme limit.

During these days not only the Polish government but also the Polish General Command were confronted with a serious situation. Unless reserves could be found somewhere, serious consequences could be expected on both fronts; in the north there was the relentless pressure on the exhausted First Army and in the south the advances by the mounted hordes of Budennij's. On the one hand the Russians had assumed the initiative and pursued the Poles without rest; on the other hand the Polish high command failed in decision as to the manner of warding off the enemy. A change of command seemed inevitable. About mid-July this change of command took place; the Chief of the General Staff, General Stanislaus Haller, was replaced by General Rozwadowski. (Pilsudski: "I chose Rozwadowski for this post not because he was the best, but because he represented the fortunate and general difference from the other general officers, as he never lost his stride, ability, morale and was a believer in victory for us.")

One of the first measures taken by Rozwadowski was an order that the line: Njemen—Szczara—Oginski Canal be held at all costs, the north flank of the First Army be made strong, and under no conditions to evacuate Grodno.

In face of this, on 19 July the Russian General Tuchatchewskij ordered the following for 21 July: the capture of the entire Njemen—Szczara position; the capture of Grodno by the III Cavalry Corps; the crossing of the Njemen above Grodno by the Fourth and Fifteenth Armies at Lunno, and by the Third Army at Mosty, while the Sixteenth Army was to open the Szczara front at Slonim.

Grodno would be the focal point in the battles ensuing as a result of this order. This former Russian fortress was very weakly manned by the Poles, having but 3,000 men and about 20 field pieces, thus being much too weak to repel a determined attack. On the evening of 18 July Gais-Khan appeared with his horsemen and with the infantry, which was brought forward on peasant carts, and he attacked the city on 19 July. He drove the Poles over the Njemen and captured numerous prisoners and most of the field pieces, as well as most of the food supplies, which the Poles were unable to

remove. The Polish reinforcements which were on their way to Grodno came too late to prevent the fall of this key position. General Szeptycki then ordered the Polish First Army commander to recapture Grodno at all costs. The troops assigned to this mission, after having gained a foothold in the southern portion of Grodno, were driven back due to the vigorous Russian resistance.

*The Forward Movement of the Russians from the Njemen
Up to and Across the Bug River (21 July-6 August)*

(See Sketches Nos. 12 and 13.)

The importance of the line: Njemen River—Szczara River—Oginski Canal to the Poles was that it represented the last strong position in front of Warsaw. The next natural position, the Bug River line, could easily be turned via Ostrolenka—Ostrow. The condition of the First and part of the Fourth Armies was such that it promised very little success, due to the fatiguing retreat, unsuccessful combat, considerable casualties, and many desertions. Fresh troops fit for combat were not available for the disorganized front which sorely needed them.

During the night of 21 July the Russians penetrated the line of the Fourth Army at Slonim, driving a wide wedge into it. On 23 July the Russians crossed the Njemen sector of Grodno as far as Mosty and forced the Polish First Army back to the southwest. On 24 July General Szeptycki ordered a general retreat for the First Army via Tykocin—Gorodok and for the Fourth Army via Swislocz and Nowy Dwor.

The Russian morale was very high due to their victorious advance of the decisive north flank of more than 190 miles in 16 days. They were ready for greater efforts. Tuchatschewskij ordered an energetic pursuit and directed that the line: Ostrolenka—Ostrow—Kossow—Drogiczin—Biala—Wlodawa be reached by 3 August.

The Russian III Cavalry Corps was ordered to capture the fortress Ossowiec into which General Romer, the new commander of the Polish First Army, had ordered one infantry regiment.

On 26 July the fighting was resumed. On 27 July Gais-Khan captured the weakly defended Ossowiec Fortress and

opened the way to Lomza and Ostrolenka. On 28 July the Russians, after occupying Bialystok, reached the Narew River, and on 31 July they moved into Lomza. Due to these Russian successes the north flank of the Polish First Army was virtually in the air. Up to the present time it had to withstand the hardest pressure.

The Polish military leaders decided, after having failed to stop the Russian advance on the Njemen—Szczara River line, that they would endeavor to do so on the Bug River, and, simultaneously with the forces assembled at Brest-Litowsk, start a counteroffensive in a northeasterly direction.

At the end of July General Haller, who had replaced General Szeptycki as commander of the north front, received instructions accordingly. This order, which in its basic idea was the forerunner to the battle of the Vistula of a few days later, was not carried out due to the unexpected sudden fall of Brest-Litowsk, something neither General Sikorski nor Pilsudski had expected.

Sketch No. 12 shows the line reached by the Polish forces on 31 July. The newly organized detachment of General Roja was to cover Ostrolenka while a brigade of volunteers from Warsaw was moved forward to the Narew as a reserve for the First Army.

In the meantime the Russian avalanche rolled relentlessly toward the Vistula River and the capital of Poland. On 2 August, Brest-Litowsk fell. General Sikorski, by counter-attacking, succeeded in stopping further advances in this area. In spite of this, the Bug line had been opened for the Russian troops at a most opportune place. During the next days' fighting the Russian Sixteenth Army crossed the Bug River at Janow and the Third Army at Drogiczin, while the Fifteenth Army advanced toward Ostrow, and the Fourth Army in conjunction with the III Cavalry Corps captured Ostrolenka after steady fighting. Sketch No. 13 shows the location of forces of both sides on 6 August.

Tuchatchewskij intended that the line: Przasnysz—Wyszkow—Siedlec—Parczew be reached by 8 August and set the capture of Warsaw for 12 August.

While these military events took place the diplomatic conferences between the Poles and the Russians dragged on from 22 July until 30 July without results.

The Polish delegation which arrived behind the Russian lines on 30 July had to return without accomplishing anything because the Russians demanded impossible conditions. It can be realized that the Soviet Powers, who figured they had won the war, did not desire to conclude a peace by compromise, especially as they were only about 65 miles from Warsaw. It is also understandable why the Poles desired at this time to evade a further military decision.

Historical as well as military crises often take the most incomprehensible turns. Such a "miracle" took place two weeks later.

The July Events in Volhynia, Podolia, and East Galicia

(See Sketches Nos. 10 and 13.)

The situation on the south front at the beginning of July is shown in Sketch No. 10.

After a short respite Budennij, on 3 July, forced the crossing over the Goryn at Ostrog and captured Rowno on 4 July. The Polish Second Army withdrew in two groups from here; one group composed of 3 infantry divisions and a cavalry brigade, which had been sent from the north, withdrew in the direction of Kowel; the other group with one cavalry division and an infantry group withdrew toward Dubno. To the north of the Second Army as well as in the vicinity of the Third Army and also in the area of the Group Polesie, there was almost no combat activity.

The Russian Fourteenth Army under Proskurow reached the south flank about this time.

Coincident with the starting of the Russian major attack on the north front we find that in the south Budennij had already reached a point 125 miles from the door of the capital of Galicia—a circumstance that can easily be seen must have caused the Polish military leaders great worry. In order to offer resistance to the aggressive Budennij, the Polish Second Army was ordered to recapture Rowno. After surprising the Red cavalry divisions it forced its way into Rowno during the night of 8-9 July, secured the war materials stored there, and withdrew the following night toward Luck.

The Polish Third Army, which had been ordered to move behind the Stucz River, had barely reached it, when, on 8

July, it was attacked along the railroad line: Rowno—Sarny. After a short halt at Goryn, it took position first behind the Styr River, then behind the Stochod River to avoid further contact with the enemy. Naturally this withdrawal greatly influenced the situation of the Group Polesie.

The Polish Sixth Army withdrew to the line: Zbrucz—Woloczisk—Kremenec—Dubno to secure closer contact with the Second Army. In doing this the Sixth Army encountered considerable difficulties, because the Russian cavalry had already raided behind its lines, interfering with the Polish trains and destroying the bridges along the line of retreat.

On 12 July Budennij captured Dubno but on the next day had to withdraw toward Olyka due to an attack by Polish cavalry, some of whom came from the Second Army from Luck and a division from the Sixth Army, which came from Kremenec, thus forming a pincer. This event did not alter Budennij's determination of breaking through the Dubno-Brody line to attack Lemberg. On 18 July the Red 4th Cavalry Division broke through the Polish lines between Dubno and Luck and moved toward Brody. Simultaneously the Russian troops increased the intensity of their attacks on Dubno and captured this town. By 22 July they forced the Poles back to Radziwilow.

Similar to their efforts at Dubno, the Poles intended to encircle Budennij at Brody—Beresteczko by a combined attack of the north flank of the Sixth Army with that of the south flank and the cavalry of the Second Army.

The execution of this plan during the last days of July was not successful, especially as the fall of Brest-Litowsk on 2 August forced the Third Army to withdraw behind the Bug River, which in turn forced the Second Army to do likewise. Nevertheless the fighting at Brody gave the Poles one advantage: Budennij did not continue his attacks but withdrew his forces and remained quiet for the next few days. This made it possible for the Poles to reinforce the north front with troops from the south front (18th Infantry Division) in order to bring about a decision at the north.

Worth mentioning is the fact that during the month of July the Poles were also compelled to retreat on the south front even though they out-numbered the enemy in infantry and had about an equal number of cavalry as the Red mounted

SKETCH NO. 10

POLISH

NORTH FRONT: Commander, General Szeptycki

North flank, First Army (General Zygmuntowicz)	5½ Inf.Div.
(56 mile front)	
Center, Fourth Army (General Szeptycki)	3 " "
(186 mile front) (from 7 July, General Skierski)	3 " "
South flank, Group Polesie (General Sikorski)	3 " "
(125 mile front)	
Army Reserve behind First Army	1 " "
" " " " Fourth Army	½ " "
	<hr/> 13 " "

In addition to this opposite Lithuania at Wilna..... 1 " "

SOUTH FRONT: Commander, General Rydz-Smigly

North flank, Third Army (General Zielinski)	3 Inf.Div., ½ Cav.Div.
Center, Second Army (General Raszewski)	3 " " 1½ " "
South flank, Sixth Army (General Jwaskiewicz)	3 " " ½ " "
	<hr/> 9 " " 2½ " "

RUSSIAN



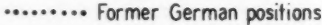
NORTH FRONT: Commander, General Tuchatschewskij

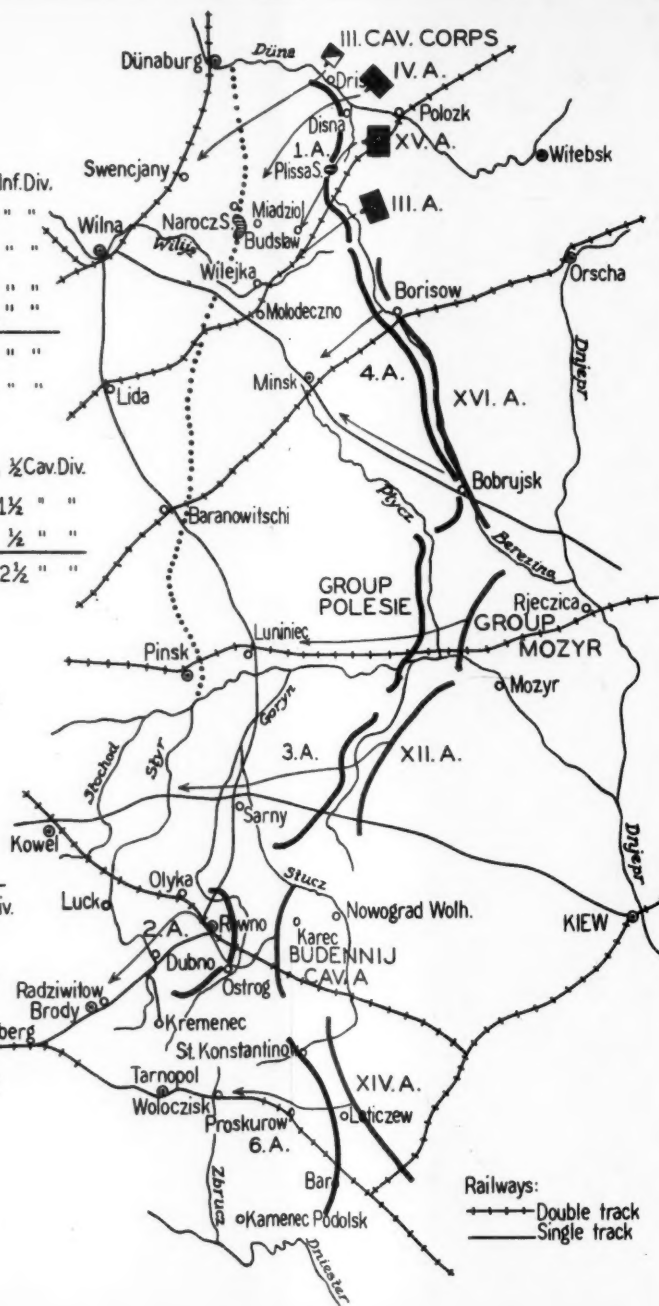
III Cav. Corps (Gais-Khan)	2 Cav.Div.
Fourth Army (Sergejew)	4½ Inf.Div.
Fifteenth Army (Kork)	4 Inf.Div.
Third Army (Lazarewitsch)	4 " "
Sixteenth Army (Sollogub)	5 " "
Group Mozyr (Kwesin)	3 " "
	<hr/> 20½ Inf.Div., 2 Cav.Div.



SOUTH FRONT: Commander, General Jegerow

Twelfth Army (Woskanow)	3 Inf.Div., ¼ Cav.Div.
Cavalry Army (Budennij)	2 " " 5 " "
Fourteenth Army (Molkotschanow)	2½ " "
	<hr/> 7½ Inf.Div., 5½ Cav.Div.

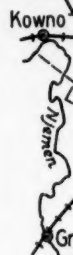
62 Miles

 Location of opponents at the beginning of July
 Russian line of advance
 Former German positions






Railways:
 Double track
 Single track

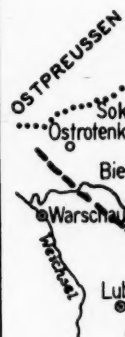
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





62 Miles

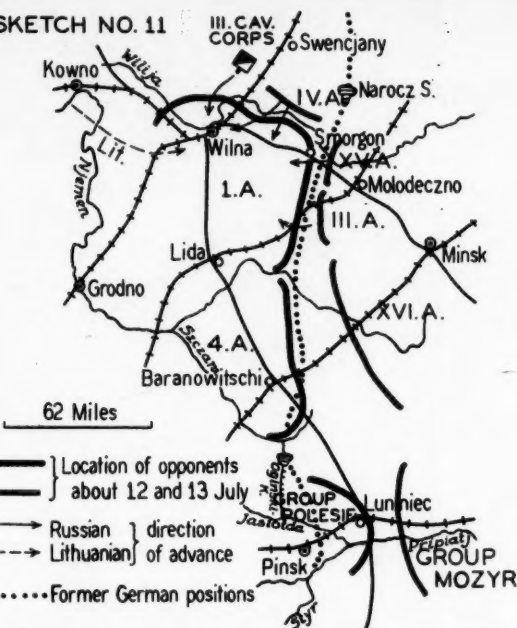
 Location of opponents at the beginning of July
 Russian line of advance
 Former German positions

SKETCH NO. 12

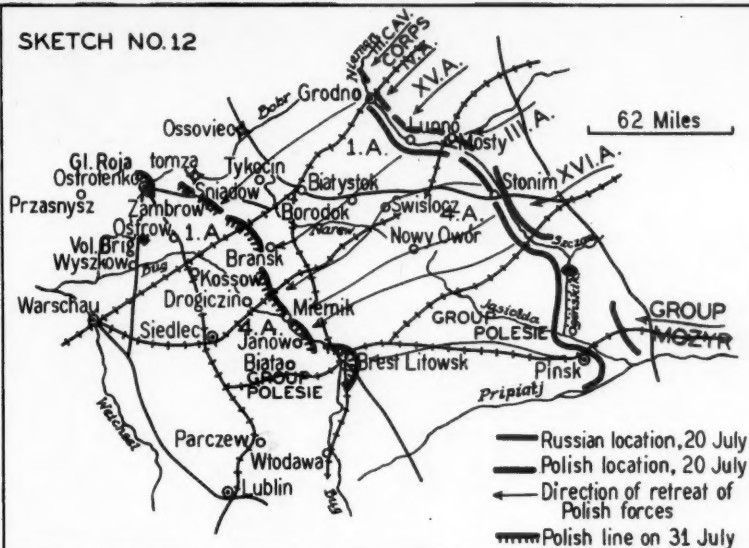


 Middle
 4 July
 22 July
 6 August
 "Curzon" line
 Boundary

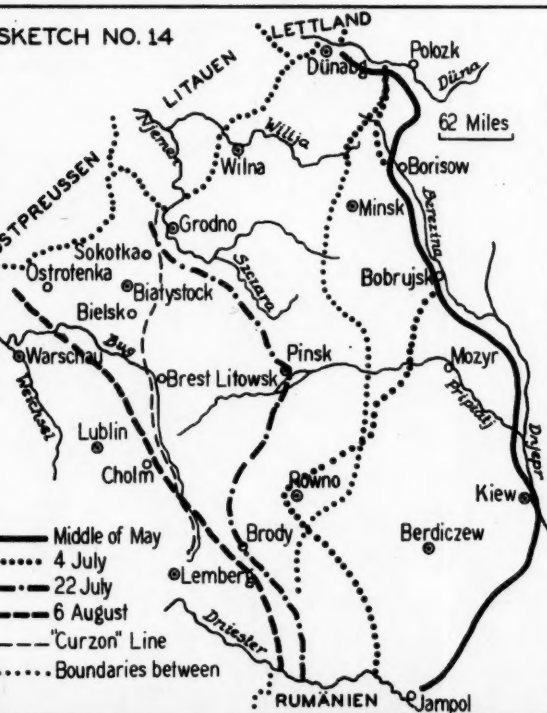
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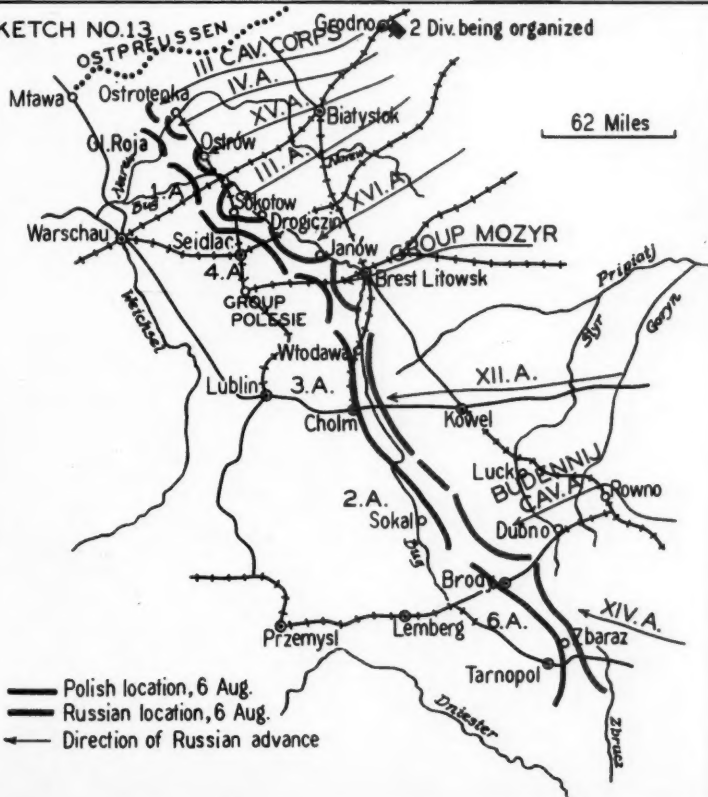
SKETCH NO. 12



SKETCH NO. 14



SKETCH NO. 13



forces. It seems that the name "Budennij" and the fear of his horde affected the Polish command more than was necessary.

On the Russian side, Lemberg greatly attracted Budennij, a circumstance which prohibited a strategic cooperation of both Russian Army fronts during July.

It seems as if the headquarters of the south front could not control the hard-headed Budennij sufficiently. After the capture of the capital, Rowno, on 4 July, it was no doubt the intention of this headquarters to combine the mass of the mounted army with the Russian Twelfth Army to create a force of 5 infantry divisions and several cavalry divisions for a drive through Kowel—Lublin against Warsaw, and to use a smaller group (the Sixth Army reinforced by detachments of the cavalry army) as a flank protection for the main force and the eventual occupation of Lemberg.

*Observations Relative to the Situation on the Eve
of the Vistula Battle*

General Tuchaschewskij's estimate of the condition of the Polish Group is indicative of the attitude of the Russian command:

"The combat strength of the Polish Army was completely destroyed by its steady misfortunes and continuous retreat. It was not the same army with which we had to contend in July. Crushed and despondent, the officers and men lacked the morale to resist. The lines of retreat were filled with deserters. No type of disciplinary measure could restore order and morale."

This estimate by the Russian commander-in-chief to a great extent fitted the hard-pressed Polish First Army. Its combat (organizational) strength had dropped to a minimum, due to desertions, march and combat casualties. Some of its units, for example the 11th Infantry Division, had to be completely reorganized before the beginning of the Vistula Battle. It was a great psychological error on the part of General Tuchatschewskij to estimate all of the Polish forces by the condition existing in some of its combat units, because there were several Polish divisions that had retained their combat strength; for example, the 9th, 14th, 15th, and 18th Infantry Divisions and the 1st and 3d Legionnaire Divisions.

It is true the desertions and the insubordination that existed in the field and combat trains and marching columns were beyond description. A French officer—Saint Dizier—gave examples of conditions existing in the field and combat trains of a brigade of the 2d Legionnaire Division as it crossed the Narew River. "The field trains comprised of about 1,000 escort wagons which were loaded with booty and the most remarkably useless articles. It required about 2,000 horses to haul these vehicles; accompanying this baggage train were 3,000 men who squatted by threes and fours on the loads. This uncontrolled baggage train was in constant throes of panic; at the sound of the first cannon shot or the least firing of small arms, they fled."

Pilsudski was compelled to grant a general amnesty to all deserters who returned to the front by a definite date. It is not correct to judge this picture too severely. It must be considered that the forces were made up of young, hurriedly gotten together, and poorly trained militia influenced by the fact that their parents had been subjected to virtual slavery during six years of war.

In comparison to this the morale of the Red forces was easily raised. The Reds, in fact, had arrived at the goal of their efforts and the plundering of Warsaw and Lemberg was beckoning before their eyes.

The progress of their own forces and the weakened resistance of their opponents encouraged the Russians for an immediate engagement in the last decisive battle of the war: the capture of Warsaw. An energetic leadership would not have permitted the opponents time to again assemble and reorganize new defenses along the Vistula River. Even the allied help sent to Poland from France and England demanded a quick ending of the war. On the other hand, following the capture of the Bug River line, existing conditions dictated a pause in the Russian operations. The Poles during their retreat had not forgotten to destroy the railroad and telegraph lines; thus the Russians found their rail terminals on the Njemen River. Even though most of the Soviet armies had lived off the land and by forceful requisition of peasant wagons dragged their supplies behind them, they still had to haul reinforcements and supplies over 160 miles from Narew to the Vistula River. This in itself was a serious condition.

The condition of the communication service was just as unfavorable. The shortage of wire made the radio the sole means of communication, the operation of which was unsatisfactory and lacked secrecy. In spite of this, the forceful decision of the Russian leaders to move on to the Vistula River can hardly be criticized. No human reckoning thought that the fortunes of war would desert the Russians, who were so close to victory.

The Russians made one other mistake besides the underestimation of the defensive strength of the Poles. They had figured that the time was ripe for a Bolshevik revolution in the downtrodden newly-formed Polish state. They had built their hopes on the distress of the proletarians as well as on the peasant's desire for land, hoping, upon entering Warsaw, to make the people happy by having a previously prepared Red administration.

About the time the dangerous Russian threat approached, a popular national Polish spirit flared up. It was the first time since the Polish declaration of independence that the quarrels between the various parties stopped so that a national council for the defense of the land, made up of members of all parties, was formed on 20 July.

In addition to this, the Polish Minister of War, Soskowski, the most ardent assistant of Pilsudski, had since 1 July made feverish efforts to secure men and materials for the rehabilitation of the combat strength of the army. He also seized all resources of the country. Polish records state that Soskowski, beginning 1 July, managed to secure 73 new batteries, 200 field pieces, 1,000 machine guns, 20,000 horses, etc., for the military service; he also made it possible to enlist about 100,000 volunteers in the seven weeks between 1 July and 20 August.

The total strength of the Polish combat force was estimated to have been raised at that time to about 900,000 men, which increased to 1,200,000 by the conclusion of the armistice. In contradiction, the Polish War Historical Section gives the strength of the Polish front-line troops at the peak of the Vistula battle as 190,500 men, of whom 144,500 were engaged on the north front. A noticeable difference in these figures, indeed, but there are always fewer men in a citizen army who are ready for front-line service with rifle in hand

than those who offer their services for the less dangerous duties.

(To be concluded)

STRATEGIC MOVEMENT BY RAIL IN 1914

By Major F. During, Infantry

The reason the year 1914 was chosen for this study of strategic movement by rail is because it includes those opening months of the war which were characterized by the initial concentrations and mobile warfare; because the railways were efficient to a degree impossible of attainment in 1918, in view of the depleted personnel and overstrained equipment.

TRANSPORTATION PROBLEM AT THE OUTBREAK OF WAR

For a Continental power the outbreak of war involves three principal categories of military movement:

- (a) Mobilization.
- (b) The establishment of covering forces on the frontier.
- (c) The strategic concentration.

Each presents a different problem. Mobilization involves the movement of innumerable individuals, small parties, and supplies in all directions to the various mobilization centers at a period when civil traffic is still at its usual, if not at an abnormal, level. The establishment of the covering forces in position means the movement of complete units at a time probably coincident with mobilization, while either or both functions may conceivably overlap the strategic concentration. This involves the continuous and intensive movement of complete units from the interior to their concentration areas, making use of all routes available.

It is important, however, to remember that during the days immediately prior to and following a declaration of war, other movement is taking place. This may be classified, in continuation of the above headings, as:

- (d) The maintenance traffic of the armies during mobilization and concentration (small in comparison with other movements).

Abstracted from *Journal of the Royal United Service Institution* (Great Britain), February, 1935. Article by Captain C.S. Napier, R.E.

(e) Civil traffic, which can not be entirely suspended; and the evacuation of refugees and material from frontier districts exposed to invasion constitutes a special problem.

(f) Technical movement, i.e., movement in order to place the technical service itself upon a war footing (what the French call the railway's "toilette"); technical maintenance traffic, and, last but not least, the perpetual movement of rolling stock to meet all these demands upon the railway. With every troop train, for instance, must be linked the movement of empty stock to the entraining station and of the stock again empty from the point of detrainment.

TECHNICAL EFFICIENCY AND STRATEGIC PLANS

For many years preceding the War the European Powers spent freely on new construction, double tracking, junctions, additional loops, sidings, and military platforms; on improving and standardizing line equipment, strengthening track and bridges to carry heavier locomotives; on continuous brakes for freight trains; and on operating methods, such as centralized telephonic control of train movement. Though not without economic value, these measures far exceeded commercial requirements in peace.

Strategic railway construction was carried farthest by the Central Powers, as was natural from the circumstance of their being on interior lines.

In Germany, during the years of tension immediately preceding the War, work continued uninterruptedly on a comprehensive scheme for the improvement of the strategic railway system, and the outbreak of war found the German railways at a pitch of development which satisfied in every material particular the requirements of the Higher Command. In the West fifteen bridges in all had been built over the Rhine between Strassburg and Wesel; thirteen independent double-track routes were available for strategic concentration; and four double-track lateral lines, so that within three days the fighting troops of four army corps could be transferred from one to the other wing. In the East we find three main routes in Upper Silesia, but only two through double-track routes East of the Vistula, yet sufficient for the small forces allotted initially to the eastern front. Across Germany were

four east and west double-track routes (west of the Vistula). The military value of the German railway system was further enhanced by its high operating efficiency.

Improvements in technical efficiency prior to the War permitted both greater freedom and greater density of strategic movement: greater freedom gained not only by new construction but also by the standardization of equipment and improved control; greater density by increases in train load, running speed, and line capacity.

This technical development was, of course, influenced by the current conception of national strategy. But the inevitable reaction should be noted. The construction of new railways tended to crystallize the strategic ideas which had brought them into being; variants were possible only within strict limits, and improvisation meant chaos. In France, for instance, the variety of plans which emanated from the Ministry of War between 1870 and 1914 may be said to have had at least one beneficial effect: the whole, and not only part, of the Est system was at one time or another raised to a high standard of efficiency; so that Plan XVII, which came into force on 15 April, 1914, implementing the doctrine of the offensive, could make use of all lines leading to the frontier. But this preoccupation with movement solely to the frontier was responsible in a large degree for comparatively poor lateral communications¹; and ability to reinforce the left wing more quickly might have had important strategic results in August, 1914.

Programs, not only for strategic concentration but for all military and even civil movement, following the suspension of peace timetables, were prepared by the Railway Section of the German General Staff, acting in liaison with the military section of the civil railway administration. The foundation for all movement was the military timetable. These programs were revised every winter, revision being based on:

- (a) Any modification of strategic plans.
- (b) Any alteration in war establishments or location of units.
- (c) Constant study of the technical situation as modified, for instance, by new construction or increased line

¹There was, for instance, no lateral double line nearer to Paris than Chalons—Reims—Laon—Amiens.

capacity, with a view to possible acceleration of the concentration even by a few hours.

Supplementary to the movement programs, the possibilities of diverting traffic from main lines in the event of accident or sabotage during concentration were also worked.

THE GERMAN CONCENTRATION

Till 1913 alternative plans of concentration East or West were worked out in detail, but from that date a major concentration was envisaged only on the Western Front.

Four periods may be distinguished during the critical days of July and August, 1914:

(1) Up to 12:00 noon, 31 July, preliminary measures were quietly taken as political tension developed into the certainty of war.

(2) From the "war imminent" warning order issued at that hour to the order for general mobilization at 5:00 PM, 1 August, measures of security and preparations for war were openly pushed.

(3) The mobilization period till 6 August.

(4) The strategic concentration during 6-7 August.

Before turning to the four main categories of movement—mobilization, covering troop moves and strategic concentration, civil traffic, and technical movement—some particulars of the executive organization are necessary.

By 1914 Germany, like other European Powers, had developed an organization for coordinating military requirements with technical possibilities.

The Chief of the General Staff was in close touch with the Imperial Railway Bureau, the central organ of the civil railway administration. The galvanic body was, however, the Railway Section of the General Staff, the personnel of which was drawn from the most intelligent stratum of staff officers—and commonly regarded as approaching lunacy! The head of the Railway Section was responsible for the coordination of all measures of preparation for war, e.g., new strategic construction, mobilization and concentration programs, and arrangements for assuming control of the civil railway system. The collection of technical information and the work of movement plans devolved largely upon "Line Commissions,"

comprising one military and one technical member with a mixed office staff. Of these commissions there were twenty-six in Germany, with their headquarters at important railway centers and their spheres of action corresponding generally to the operating divisions of the State railway system.

During the war control was centralized at General Headquarters, the head of the Railway Section becoming Director of Railways under the Quartermaster General. His duty as *Chef des Feldeisenbahnwesens* was to coordinate all transportation resources for war purposes, and his sphere of authority embraced all railways of military importance without exception, both at home and in the theater of operations. The Line Commissions (*Linienkommandanturen*), supplemented later by additional appointments in occupied territory, now assumed responsibility for the technical execution of military requirements under instructions from the Director of Railways, who was also represented by liaison officers (*Bahnbeauftragte*) from his Section, acting as technical advisers at all Army and Line of Communications Headquarters. For the repair, equipment, and working of lines in occupied territory the Director of Railways had at his disposal operating and construction companies amounting in all to over 30,000 men.

Mobilization movement programs, based on information from the military authorities, were revised early each year at conferences between the interested parties, military and technical. The distribution list for these programs, to which all mobilization schemes had to conform, was strictly limited in the interests of secrecy.

General mobilization was ordered at 5:00 PM on 1 August. During the first two days of mobilization (1 M and 2 M days) peace timetables were still in operation. Though freight service was suspended, passenger services were carrying an enormous traffic. Line of communication protection troops were being established; and the railway itself was in process of transition from a peace to a war footing. Nevertheless the movement of reservists and remounts to the frontier corps was superimposed upon this burden. Individuals and small parties travelled by normal trains, larger parties by supplementary and special trains (*Militärbedarfzüge* and *Militärsonderzüge*)—the former had been worked out in peace;

the latter (700 trains during 1 M and 2 M days) were ordered by arrangement between the military and technical authorities.

These two days were, in fact, those of maximum strain upon the railway system as a whole. At midnight 2/3 M day the military timetables came into operation. For the next three days mobilization movement continued at maximum intensity. From 6 M day it dwindled, to revive only after completion of the strategic concentration. Altogether 20,800 mobilization trains were worked out in peace for the period 1 M—20 M day, carrying 2,070,000 men, 118,000 horses, and 400,000 tons of supplies.

The concentration program prepared by the Railway Section of the General Staff and revised yearly took final shape in two forms:

(a) Movement lists (*Fahrlisten*) for the technical service, showing for each section of the railway system and for each M day the units to be moved, strengths, rolling stock required, and time for entraining, etc.

(b) Movement tables (*Fahr- und Marschtafeln*) for military commanders, showing for each division or equivalent command the allotment of units to trains, time and place of entraining and detraining, stops for watering animals, etc.

For 1 M to 4 M days both movement lists and tables were printed during peacetime and circulated under secret cover on a minimum distribution list. For movement subsequent to 4 M day they were printed after mobilization.

The concentration programs distinguished three categories of movement:

- (1) Troops immediately available for frontier, coast, and line of communication protection.
- (2) Units mobilizing with exceptional rapidity.
- (3) The general strategic concentration.

Movements under category (1) were worked out *verschiebbar*, i.e., time to be determined by agreement between the Line Commandant (*Linienkommandant*) and the civil railway administration. The latter accepted responsibility to provide the necessary rolling stock on short notice.

Urgent troop movements under category (2), taking precedence of mobilization movement, comprised:

- (a) Advanced echelons of headquarters.
- (b) Six reinforced infantry brigades with siege artillery and engineers, detraining during 1 M—3 M days in the Aachen—Eupen—Malmédy region for the *coup-de-main* against Liége.
- (c) Seven mixed infantry brigades, detraining during 2 M—3 M days along the frontier, as covering troops for the strategic concentration.²
- (d) Four cavalry corps (ten cavalry divisions) detraining and brought up to strength during 2 M—7 M days.
- (e) Railway troops and supply detachments for preparatory work in concentration areas.

In all there were 1,440 trains, of which 340 were special trains during 1 M and 2 M days, when peace timetables were still in operation.

The invasion of Luxemburg was authorized at 12:45 AM, 2 August. Part of the 16th Division, in immediate readiness, under escort of an armored train, was routed straight through to Luxemburg, where it was joined by marching columns during the forenoon. The Luxemburg railway system, important for the subsequent concentration, thus passed intact under German control.

The concentration against Liége was more serious, and was difficult technically because, for reasons of secrecy, details were withheld during peacetime, and the railway authorities received only a few hours' notice.

The main strategic concentration commenced on the evening of 5 M day (6 August). Timetables included a 4-hour break (*Tagespause*) each day for the purpose of making good irregular running or delays, the break being designed to occur at night west of the Rhine, where congestion was most likely.

Thirteen independent double-track roads carrying 660 trains daily, were available for the movement of 34 corps. Of these, three detrained east of the Rhine (XIV and XIV R at Freiburg, IV R at Düsseldorf), while the remainder (VIII and VIII R) entrained at Cologne, XXI at Strassburg and Saarbrücken; so that 28 corps (550 trains daily) actually

²These thirteen brigades received their reservists during 4 M—7 M days.

crossed the Rhine by one or another of the fifteen railway bridges.

Most corps were allotted 20 (a few 30) trains daily, both divisions moving simultaneously, i.e., by trains at 2-hour intervals, excluding the 4-hour break, from the divisional entraining station. The order of movement was: advanced parties; engineer and supply detachments; cavalry; headquarters; infantry and field artillery mixed; medium artillery and services (*Kolonnen und Trains*): in all about 140 trains for an active corps, 85 for a reserve corps, and 31 for cavalry divisions, plus supply trains included in the concentration programs.

Most of the double-track roads carried two, a few three, different corps simultaneously; but in general a maximum of 50 trains each way daily was observed. The heaviest traffic was through Cologne, where 60 troop trains daily crossed the South bridge (double track) and 2,150 mobilization and troop trains passed over the North bridge (4-track) moving west during the period 2-18 August at an average interval of ten minutes.

The fighting troops and first echelon of services completed detraining on 14 August, the second echelon following till 17 August. The whole concentration was executed according to program without serious mishap.

The concentrations in the East and on the northern frontier were relatively simple. In all 11,100 troop trains carried some 3,120,000 men and 860,000 horses.³

The readjustment of personnel, locomotives, and rolling stock to place the railways on a war footing involved considerable movement during the first few M days; e.g., 180 locomotives had to be dispatched to the Saarbrücken district, 150 to Ludwigshafen, etc.—530 in all during 1 M—4 M days. The eastern districts in particular required additional rolling stock; e.g., 2,300 freight cars were needed at Königsberg, 1,850 at Bromberg, etc.—in all 8,650 cars=173 trains during 3 M—9 M days. Meanwhile the railway administration executed their allotted program of rolling stock conversion to military uses and the provision of additional ramps, platforms,

³The corresponding figures for the French concentration were 4,619 trains for some 1,200,000 men and 400,000 horses.

waterpoints, and arrangements for the supply of troops en route.

Beginning 10 M day the accumulation of a rolling stock reserve at the disposal of the Director of Railways for strategic troop movements started. This reserve of empty trains, held on their return from concentration detraining stations and sufficient to move seven corps, was distributed so as to facilitate the rapid initiation of troop movements behind the western front. On 11 August sufficient stock to move two corps was behind the left wing in the Karlsruhe and Stuttgart districts; on 16 August enough for three corps on the middle and lower Rhine; and on 21 August for two corps farther back in the Münster and Kassel districts. In addition, on 13 August rolling stock for one division and a proportion of corps troops was held in each of the forward districts—Cologne, Saarbrücken, Ludwigshafen, and Strassburg—so that the forward Line Commandants were in a position to execute tactical troop movements from their own resources and to meet the first requirements of large strategic moves without delay.

THE FRENCH CONCENTRATION

The French concentration bears a general resemblance to that of the German, though the forces to be moved and the routes available were less. Plan XVII envisaged an immediate offensive with all available forces.

The period of concentration was divided into two phases: 4 M+12 hours to 11 M+12 hours, during which the fighting troops of active corps and their essential services would be concentrated in readiness to advance any day after 12 M day; and 12 M to 17 M for the movement of reserve units and less urgent rear services.

Military timetables were prepared on the basis of 72 trains each way daily on the principal double lines; but actual troop movement rarely exceeded 48 trains a day.⁴ Altogether 4,035 troop trains were dispatched over the 10 *lignes de transport* on the Est system during the period of concentration. Yet this figure, even doubled so as to include the returning empty stock trains, fell far short of the total for all other traffic—

⁴The supply trains brought the normal density during concentration up to 56 trains a day.

12,500 trains, though largely short distance, for the same period.

The concentration was completed to program.

COMMENTS

The general impression left by a study of the initial concentrations in 1914 is that of a vast clockwork machine functioning with inflexible precision. Where there was no element of political or strategic uncertainty, plans were executed to program: for it had been possible to calculate the technical factors with exactitude. The data—line capacity, rolling stock available, etc.—were all known.

Post-war conditions have introduced a new and incalculable factor. The railway system can not be screened from hostile interference. To avoid paralysis by air attack, or by the mere threat of air attack, a far greater measure of flexibility than obtained in 1914 is necessary. A railway system is not flexible when congested. In 1914 the concentration of maximum forces on the frontier within a minimum time imposed a maximum strain upon the railways; their capacity was the only limiting factor. The same density of traffic is no longer possible; at least, it can no longer be guaranteed.

A reduction of density can be effected in several ways. First, modern armies tend to be smaller than in 1914, while the increase of mechanical transport permits some relief of the railways and a greater depth of the concentration area. Second, the continuance of strategic construction since the war is increasing the number of routes available. Third, the creation of a protected frontier, as by France, makes the time factor less critical.

This decreased density of military movement over the system as a whole, though not necessarily over every part, not only counteracts in a large degree the menace of air attacks at the outbreak of war but it also restores the railway system to its place as an instrument of strategy from the very outbreak of war. In 1914 the initial concentrations were sharply distinguished by their rigidity from the subsequent strategic moves in the course of operations. That this was not strictly necessary, even under the circumstances of 1914, the German Official History bears witness. "The determination to concentrate against France took shape in a movement program so

rigid from excess of detail that it seriously restricted political and military freedom of action. Greater flexibility would, within limits, have been possible. The Railway Section of the General Staff was practiced during peacetime in the rapid calculation of large troop movements; and in particular, by war games, in variants and modifications of the concentration plan. . . . Necessity and practice under war conditions developed a less rigid technique of movement control, applicable no less to the initial concentration. . . . At the outbreak of war indeed, both the military and technical railway authorities were sufficiently familiar with more flexible methods to insure the rapid execution of concentration variants or strategic troop movements; but this knowledge had not penetrated to the higher commands and staffs."

Reference is necessary to another factor insufficiently appreciated in 1914, namely, the economic bias of modern war. The demands of industry, mobilizing like the armed forces, must be coordinated upon a national basis, while the transportation services of the country should suffer as little dislocation as possible. The transition from peace to war, also, may be less abrupt than in 1914, under the influence of political maneuvering to avoid the stigma of aggression. These considerations, coupled with the smaller volume of purely military movement, suggest that there will be less hurry to substitute a uniform military timetable for the accustomed methods of working. Marchands ("Les Chemins de Fer de l'Est") considers a rigid mobilization movement program impracticable; he suggests a progressive reinforcement of the troops on the frontier, quietly effected in the intervals of normal traffic. One thing is certain: to achieve the best results the chiefs of the civil railway administration must be taken into confidence by the military authorities.

COMBAT OF TANKS VERSUS TANKS

By Major G.B. Guenther, Cavalry

The rapid increase in the number of tanks in modern armies indicates a great possibility that a large portion of future combat in war may be that of tanks versus tanks.

Abstracted from *Sancti Christophorus*, February, March, 1935. "Das Gefecht 'Kampfwagen gegen Kampfwagen'."

Provisions have been made in several modern armies for the organization of higher tank units which can readily be expanded in case of a war. Military authorities qualified to make statements on the subject have said that the best way to combat the tank is by the use of tanks and antitank weapons. War experience proved this fact but the presence and availability of great masses of tanks will in all probability result in their mass employment to break up other large tank attacks or at critical points to force a decision. The writer gives an account of a World War tank combat in which both the German and British versions are discussed.

TANKS VERSUS TANKS IN THE WORLD WAR

The official war records have established the fact that there was a tank battle fought between German and British tanks on 24 April, 1918, at Villers-Bretonneux, and on 8 October, 1918, in the vicinity of Forenville—Esnes. The combat is interesting in many respects, because there was an accidental meeting of the opposing tanks and gives us today the opportunity to draw some beneficial conclusions therefrom.

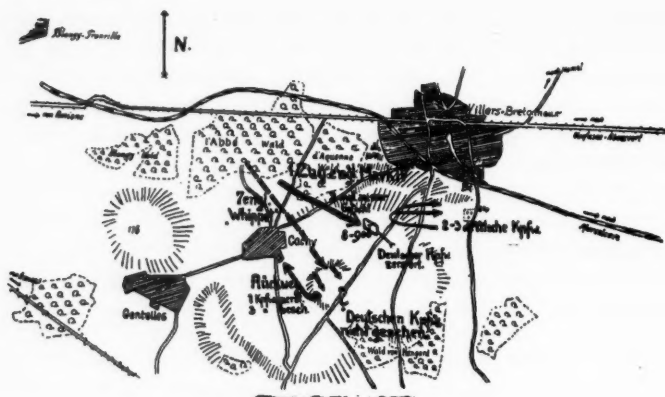
The German and British accounts differ on some essential points; both are therefore given here:

The British Account

(See Sketch No. 1.)

The German troops attacked Villers-Bretonneux on 24 April, 1918. At 11:00 AM seven medium Whippet tanks appeared about $2\frac{1}{2}$ miles in rear of the British front and were sent forward to clear up the situation. They emerged from the Bois l'Abbé north of the village of Cachy and moved on a small hill which lay between the village of Cachy and the Hangard Woods. They found this hill strongly held by infantry and light machine guns while two battalions could be seen on the reverse slope developing for battle.

The British tanks firing at ranges varying from 1,000 to 100 yards attacked the reverse slope and fired between 600 and 800 rounds of machine-gun ammunition. The confusion caused among the German troops was in the nature of a panic; they dispersed in all directions seeking cover while the tanks rode through them at will. The lowest estimate of the German losses was 400 men.



Sketch No. 1—English Version

On the return trip, the account goes on to say, one British tank was destroyed by artillery fire, three others were damaged, while the remaining three returned to the initial departure point at 3:00 PM. They had covered a distance of about 10 miles during the battle.

In this article no mention is made of the encounter with German tanks. Other British accounts had in the meantime portrayed another phase of the battle which appeared more important. It reads as follows:

Early on the morning of 24 April, 1918, 6 or 7 German tanks attacked for the first time.¹ With the aid of their support the German troops took the largest part of Villers-Bretonneux and advanced to the Bois l'Abbé.

Because of the gassing by the Germans of the Bois l'Abbé, a British group of heavy tanks "Mark IV" moved out of the woods and east thereof at 1:00 AM, 24 April, before the German attack was launched.

At 8:30 AM this group moved out to furnish protection to the British detachment trying to cut off Cachy. Two of these tanks armed only with machine guns observed a German tank in position firing on them. This was soon put out of action by gun fire.

¹The fact is that there were 14 German tanks which attacked toward Villers-Bretonneux. The first attack of German tanks took place on 21 March, 1918, at St. Quentin; the Villers-Bretonneux engagement was the second attack.

Shortly after the 8:30 AM fight, a British tank armed with a cannon, arrived on the scene and at once engaged in combat. A duel followed between the two tanks. During the course of this duel, according to British accounts, the German tank received a direct hit, whereupon the crew vacated the tank and fled.

In the meantime three additional German tanks appeared against which the "Mark V" next turned and was about to attack when it received a direct hit which put it out of action.

The action has thus far been described in General Fuller's account (in the *Royal Tank Corps Journal* of April, 1931).

A different British account in the same journal says that according to reports from a British officer (the then commander of the tank battalion) who was in the action at Villers-Bretonneux, the British tanks did not notice the presence of any German tanks during the course of the action and that the Whippet tanks were not attacked by hostile tanks.

The report continues: The British tank battalion was located at Frechinourt in the middle of April, with two companies at Fresh Would just east of Frechinourt, one company in the woods of Tronville east of the Bois l'Abbé with one platoon just west of Villers-Bretonneux in the Aqueenne Woods. The company in readiness in the woods at Tronville was later moved to the woods of Blangy and reinforced with six Whippets.

The platoon (meaning the platoon of heavy tanks) in the Aqueenne Woods advanced out of the woods toward the south during the night of 23-24 April. On the morning of 24 April the tank platoon received orders from the 23d Infantry Brigade to move to Cachy. Before this order could be carried out the platoon was engaged in combat south of Villers-Bretonneux.

A German tank appeared and in a battle put two British tanks, armed only with machine guns, out of action. The German tank fired from a concealed position.

A third British tank (armed only with machine guns) was disabled by a field cannon.

A British tank which had one cannon disabled by a grenade, used the other weapons to fire on the German tanks. It goes on to say that a German tank was stopped by cannon fire and was abandoned by the crew. This British tank was supposed to have continued its fire on two additional German

tanks, whose crews also abandoned their vehicles. This tank action was supposed to have taken place between 8:30 and 9:00 AM and was of 10 minutes duration. A German tank was then later moved from No Man's Land by this British tank battalion while the other tanks were being brought to safety from the German side.

A third British account reads: The German tanks broke through our front and smoothed the way for the following infantry. It happened, however, that three British tanks under Captain Brown were en route to the exact point where the German tanks were to attack. Unfortunately, two of these were not armed with cannon and could not penetrate the hostile tank armor with their machine guns. They continued attempting to effect an opening of the enemy armor, but these being female tanks, both were disabled by cannon fire.

Lieutenant Mitchell, commanding a male tank, found that he was being opposed by three serviceable tanks which were armored more heavily than the British. Lieutenant Mitchell attacked them at once and after dodging the salvos of the German tanks managed to get a direct hit with his 6-pounder on the tank of the hostile commander. He shot two more times and each time hit the same vehicle. After the third shot the tank was out of action. In trying to escape it fell into a sand pit, rolled over on its side, and lay there in a helpless condition with its tracks turning.

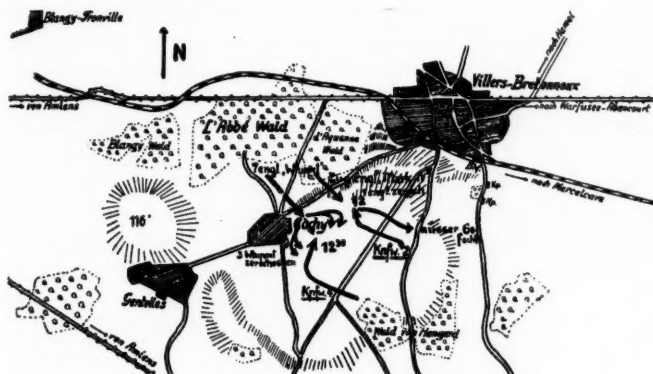
The first hostile tank being out of action, the British tank turned upon the others. The account goes on to say that they did not remain for any further developments but retired as rapidly as possible, leaving Lieutenant Mitchell "master of the situation." At the close it says: This was the quite inglorious end of the first German attempt to meet the British tank corps with its own weapon.

It is obvious that the three British articles which are quoted at the same time differ on the essential points. It is admitted that the different accounts must be considered from the same viewpoints in order to obtain the true facts.

The German Account²

(See Sketch No. 2.)

The 2d Tank Section had the mission of attacking Cachy, advancing from the northern point of the Hangard Woods. This attack was in conjunction with and in the area of the 77th Reserve Division which was attacking with four other German divisions. As soon as the leading tanks reached their objective, all those which had not arrived at the east and south edge of Cachy were to turn back to the jumping-off place at Wiencourt.



Sketch No. 2—German Version

The official German reports of the attack of two tanks is repeated since the remainder did not encounter any hostile tanks.

Tank No. 2 moved as ordered on Cachy and there reduced several machine-gun nests which had been holding up German infantry for one hour. It then moved on Cachy, a distance of 700 yards, and shot up the British positions and engaged in a battle with eight suddenly appearing British tanks. One of these was disabled by artillery fire while another was forced to retire. Shortly thereafter, Tank No. 2 was disabled by a direct hit. The armor had been pierced by a projectile from a 5.7-cm. caliber cannon. The vehicle later received a second

²From the official battle reports and orders of a German commander who participated in the attack on Villers-Bretonneux.

direct hit in the right front and a third in the oil tank. In spite of these hits it was possible to bring it within the first German infantry positions where preparations were made to demolish it since it was badly shot up. (Later it was possible to salvage it.)

The report of Lieutenant Biltz, the commander of this tank, reads as follows:

At about 12:00 noon, on 24 April, 1918, I found myself 700 to 800 yards northeast of Cachy in combat with the British forces in position on the outskirts of the village, as a number of hostile tanks approached rapidly from the Aqueenne Woods. That there were eight of the hostile tanks was later reported to me by the infantry which was in position in my rear. Of the three leading tanks of the common British type, the most advanced opened fire into my side with its right weapon. I turned my bow toward it and silenced this one by a direct hit from my cannon. One tank was brought to a standstill while the remainder withdrew to the vicinity of Cachy. As the first retiring tank went from Cachy to the north my gunner got a direct hit, putting it out of action as it tried to cross a ditch. Shortly thereafter my tank received a direct hit near our cannon opening (perhaps 6-cm. caliber) which killed one man, fatally wounded two, and slightly wounded two others. The remainder of the crew dismounted and observed from the outside the effects of the succeeding direct hits. With the help of drivers found in the vicinity, it was possible to move the tank and the remainder of my crew back to a salvage point. At the same time the infantry which had followed my advance began to retire. The radiator and oil tank were leaking, but in spite of this it was possible to move to the rear for a distance of $1\frac{1}{2}$ miles when both motors failed.

On account of hostile counterattacks during the night the infantry had to withdraw to a line on which my tank lay. Since further salvage was impossible, the equipment of the tank was made available to the infantry and preparations were made to demolish the tank in case of further withdrawal.

In abandoning the tank the two dead remained, the badly wounded man was turned over to the medical personnel, but he died in the dressing station. The slightly wounded walked back to the dressing station.

Tank No. 4 reduced additional machine-gun nests in its advance on Cachy.

The forces entrenched in a 200-yard trench were partly destroyed by flanking fire while the remainder fled. At about 12:30 PM the commander noticed the infantry retiring in front of Cachy. He turned to the north, brought the infantry to a halt, and then advanced in the direction of Cachy. From a position about 800 yards from this location seven British tanks suddenly appeared. Two were set on fire through shelling; a third was disabled. The remainder were heavily shelled and soon took to flight. The cannon of Tank No. 4 became unserviceable because of spring breakage. The retiring British tanks were engaged with machine-gun fire up to 200 yards of Cachy; the northern limit of the town was likewise taken under fire. After a series of fruitful encounters, the tank turned back to the assembly point at 3:45 PM.

The report of Lieutenant Bitter, the commander of the tanks, further states:

At 12:30 PM, Tank No. 525 was located about $1\frac{1}{2}$ miles southeast of Cachy when I noted the retirement of our infantry on a broad front at Cachy. I drove at full speed to the north and there received orders from the battalion commander to move west by all means toward Cachy and check the infantry. It was then possible for me to arrive within $\frac{3}{4}$ mile of Cachy, and the infantry followed hesitatingly. Suddenly a section of seven British tanks moved upon my position from Cachy. The first tanks went to the northeast of our right flank; the others maneuvered frontally and to the southeast with great speed. I turned my vehicle to a half-right direction and opened fire on the tank farthest to the right which had rapidly closed to a distance of 200 yards. The first shot (with armor cap) hit the drive caterpillar track; hostile tanks returned machine-gun fire. The second shot was a direct hit, and a thin flame arose from the armored chamber. Confused turning about and changes of direction of the remaining tanks followed. In the meantime my position was changed by circling in a wide semicircle, and fire was opened on the hostile tank farthest to the left at a range of 700 yards. The first shot was a direct hit; a broad high flame was the result. My cannon now failed due to a breakage of the bolt spring. The tank was next maneuvered to engage the second hostile tank

approaching from the left flank, and fire was opened with machine guns in accordance with the change of the situation. (Two of the hostile tank machine guns had been destroyed during the morning.) The crew left the British tank which had turned on its side. The four remaining tanks at once took flight at high speed toward Cachy, and I followed with well-aimed machine-gun fire to within a range of 150 yards of Cachy. The German tank then took the position on the east edge of Cachy under fire until our infantry had worked its way up to within 400 yards of the village. Hostile tanks did not again appear after 3:45 PM. Duration of tank combat: 20 to 25 minutes. Tank observations: It appeared that the British tank had been improved with a four-cornered body placed in the center of the vehicle. Speed: 10 to 15 miles per hour. Armament: Could not be identified definitely by the commander. Crew in rear was operating a revolving or automatic cannon.

CONCLUSIONS

The conclusions should be drawn from two sources, in order to clear up the points in controversy and to determine the true incidents of the fight "Tanks versus Tanks."

The fact that the two accounts differ may be due to the poor observation from ports in the side walls and front of the tanks or to the poor visibility and haze which existed on the battlefield on the morning of the combat.

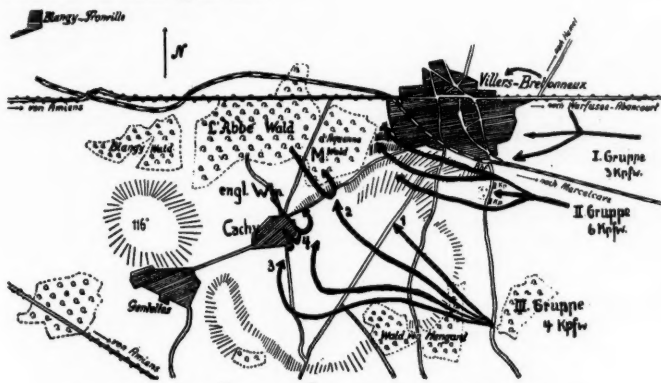
The fact has been established that there were two German tanks engaged with British tanks as follows:

Tank No. 2 (commander, Lieutenant Biltz) engaged with one heavy British tank, a Mark V.

Tank No. 4 (commander, Lieutenant Bitter) engaged with seven medium British Whippet tanks.

Contrary to the British account which stated that the other German tanks turned and fled before the British tanks, two out of three accounts mention the fact that the other German tanks were not opposed by hostile tanks and carried out their assigned missions to the north and south of the Villers-Bretonneux sector without hostile tank interference even though they perhaps were not seen by the British tank observers.

The report of the German tank commander submitted shortly after the fight is very clear and shows the correct number of hostile tanks including a description of the modified features of the medium tanks engaged. The British account says that one tank was destroyed by a direct hit from a cannon shell, that another was disabled, and that the remainder were forced to withdraw in the direction of Cachy due to violent machine-gun fire.



Sketch No. 3—Version Based on German Official Accounts

The duel between Tank No. 2 and the heavy British tank took place between 12:00 noon and 1:30 PM, and not as given in the report, 8:30 and 9:00 AM. The dense fog made visibility too bad for combat of any kind at the earlier hour. It is further stated in the report that two heavy Mark V tanks were forced out of action by the cannon fire from German tanks.

After all the controversial points are settled, the individual German tank opposed by a British organized tank unit, had to be conceded a victorious decision in this combat.

The Fourth Army, of which the British tanks were a part, confirmed the success of the German tanks in the Villers-Bretonneux engagement. The report to General Headquarters states: "The success of only the enemy's tanks must be confirmed." The German tanks no doubt had a great material and moral effect in this combat.

The lessons which we can learn from this engagement as it was actually fought and which still apply today are:

(1) The opponent who first opens fire has the advantage.

As soon as the British tanks were observed by the Germans they opened fire, thereby taking the initiative and forcing the British to conform to the German maneuvers and actions. The confusion in the British unit precluded further united offensive action.

(2) The first well-aimed shot resulting in a direct hit will bring victory in a tank duel.

In the cases of both German tanks, they independently put several hostile tanks out of action while they were in motion, which proves that it is possible to get hits from moving tanks.

(3) The tank with the strongest armor and carrying small cannon will win in tank combat.

The cannon on the German tanks were most effective against the British tanks. When it is contemplated that there will be a tank combat, it is necessary to provide a light cannon or heavy machine gun with armor-piercing ammunition for the engaging tanks.

(To be concluded)

QUESTIONS ON THE USE OF ARTILLERY

By Major G.J. Braun, Infantry

With the passing of years the World War becomes a thing of the past. Memories may always be alive and fresh to the participants, but final growth of actual facts becomes more impersonal—history blending into myths and hero-worship.

One would imagine that all controversial military questions should have been answered in these four years of war in which the leading nations of the world participated. The facts are just the reverse; the picture of the World War has not clarified things. Occasionally some erstwhile opponent definitely states what actually happened in a definite battle, but in the great majority of cases each side differed in its version of the battle; in fact, each arm had its own stories.

If these differences come from accomplished facts, it is only natural that the lessons derived vary still more. In fact,

Abstracted from *Militärwissenschaftliche Mitteilungen*, January, 1935.
"Fragen der Artillerieverwendung," by General v.Eimannsberger.

everything is being questioned today, from the armament, equipment, and organization of the different arms, down to the utilization of and the necessity for each arm.

The answer would be simple, if the basis of the method of combat could be definitely stated, but the difficulty lies in the fact that we are in a definite period of transition. Everything is moving forward; therefore the soldier can not remain in place with old ideas, otherwise he lives in a past age.

In this discussion the author considers only the major questions which concern the use of artillery in future fighting. There being no special artillery tactics, except for the combined arms, the author very carefully worded his title to cover questions pertaining to the method of combat for the artillery.

If we wish to look into the future, the near future, it is necessary to do so on a basis of past happenings. The picture may not be entirely true, but the doubtful is far better than the unknown. The combat literature of today in most countries teaches combat principles based on the experiences of the last year of the World War.

During the past war there were only fronts and lines of trenches without flanks; therefore every attack had to be prepared as a penetration. Considering the necessary frontage of the penetration and providing for lateral flank protection, the average attack front can be considered about 35 miles.

The strength of the attack artillery is determined by its mission, and it has always been the mission of the artillery to silence the hostile artillery and prepare our own attack by fire on the hostile front line.

Counterbattery fire.—The silencing of hostile artillery was made possible because the aviators and the sound detecting devices discovered the hidden hostile batteries when they fired. The situation maps also showed the location of the definitely known hostile artillery positions. This was an important factor not to be overlooked.

Every battery endeavored, independent of the maps, to engage every target in its zone of fire which could be seen by its observers. The registration fire definitely located the target. When the battery receives a masked target, the location of which is shown on the map, it can then only combat this target if it is thoroughly oriented and acquainted

with the map and knows when it has properly "registered" on the target.

The fact that the effect of weather conditions on a shot could make registration fire data erroneous was known during the last year of the War. This was more prevalent in flat country and in the moderately hilly country.

The use of gas shells was another condition that made the silencing of hostile artillery materially easier. By this procedure several gas clouds of great intensity were placed over the hostile artillery area. These moved with the wind, thereby giving the desired effect, especially so if the medial points of impact were on the outer edge of the target.

Conclusion.—Counterbattery fire did not present any basic difficulties provided the majority of the hostile batteries were known and the batteries had been properly registered and when sufficient batteries were emplaced with the proper ammunition.

Combating the infantry.—This second main mission, due to the peculiarities of the World War, has been greatly enlarged. The enemy lay in his trench areas as if he were in an underground fortress. The infantry possessed hardly any weapons capable of high angle firing; it possessed none as organic equipment capable of destroying trenches. The artillery became the only weapon that could be emplaced to destroy trenches. Fire of destruction became a principal mission, and the howitzers of various calibers the principal weapons; the minenwerfer replaced the shrapnel. Since it was impossible to know just where the enemy placed his most dangerous defensive weapons (the automatic weapons), in the maze of trenches, it became necessary to search by fire the entire first-line trench zone. This required time and enormous amount of ammunition which in turn had to be fired by numerous field pieces in a limited period of time.

Experience demonstrated that it was impossible to destroy all the hostile machine guns even with a severe preparatory artillery fire; therefore, to protect the attacking infantry it was further necessary to provide a rolling barrage. This was furnished by medium and light caliber field pieces utilizing gas shells on the enemy side, and high explosive near our troops. To be effective this required great density of fire advancing 1,200 yards in about 50 minutes.

The French differentiated their artillery concentrations during the last year of the War by dividing them into three depths. For the strongest they estimated 150 field pieces for about 1,200 yards frontage, consisting of one-half heavy and one-half medium calibers in addition to 40 mortars; the weakest depth consisted of about 80 pieces for the same frontage. Incidentally the German concentrations of 1918 were closer to the weaker limits of the French. Considering the ammunition supply for six days' firing, it required on an average 100 tons for each battery, of which 50 tons had to be placed with the battery.

Before passing judgment upon the capabilities of this method of artillery attack, it may be best to briefly describe this type of offensive.

The German attack at the Chemin des Dames offers a good historical example. The preparation for this offensive required one month: fourteen days for staff work of the front-line troops, and fourteen days concentrating the artillery, forwarding ammunition, and preparing emplacements. Not until the last night did the assault division move to the front.

To enable the artillery fire to secure the maximum range into the hostile area the mass of attack batteries were emplaced as far forward as possible, at least 100 yards behind the defensive works. There was a total artillery strength of 1,200 batteries and 1,000 mortars. In order to save time the preparatory fire was limited to $2\frac{3}{4}$ hours and began at 2:00 AM. Compared with the preparatory fire for the Flanders battle which lasted three weeks, this was basically a progressive step.

A deep rolling barrage of tear gas on the enemy side, and of medium caliber explosion, preceded the assault troops. Great importance was placed on the careful preparations for the infantry accompanying batteries and parts of the division artillery to be displaced forward in order to get into action before the barrage stopped.

On the first day of the offensive, 27 May, 1918, at about 10:00 PM, the German maximum penetration was 15 miles. This was followed by advances of typical open warfare against the French who were hurriedly brought forward until finally the offensive was stopped at the beginning of June; the Germans had reached the Retzen Woods and the Marne River.

What lessons can be learned from the attack methods used?

As long as it is necessary for an attack to be preceded by artillery fire of all calibers for a longer or shorter period, it is impossible to have the tactical element of surprise. This is a fundamental disadvantage. Another disadvantage is the necessity of massing material and equipment weeks prior to an attack. As the activity of the reconnaissance aviation increased, the greater became the danger of detection.

The necessity that this concentration of artillery equipment be as far forward in the trench zone created further disadvantages. The troops became aware of the intended attack at least two weeks in advance. Prisoners captured during the patrol combats between lines could give disastrous information, not considering information given out by deserters.

Experience has shown that all major offensives of the Central Powers during the last years of the War were known to the enemy—in some cases he knew everything up to the firing program.

At such places where the enemy was determined to defend a position, the attack would be able to just penetrate the front line. If the attacker was fortunate in one effort to drive through behind the hostile artillery area, then the first crisis was overcome and the enemy had to displace far to the rear.

The second crisis for the attacker now began. He was out of range of his own artillery, necessitating the assaulting infantry to drive forward, supported only by its accompanying artillery and having only meager ammunition. If the enemy was successful in concentrating strong artillery on the infantry, then the attack was stopped. The infantry could not advance until the enemy batteries were silenced. For this mission many plans were necessary to direct the destructive fire from the air; likewise it would require an enormous ammunition supply. All this required time and time was not available. Probably this may be the reason why all artillery attacks become ineffective soon after the initial success.

Conclusion.—The defender can organize a defense more quickly than the attacker will be able to prepare the necessary means to continue to attack.

During the latter half of 1918 the World War developed another effective counter means of combating an artillery attack, namely, the displacement to the rear.

As soon as the preparations for a major offensive became known, the artillery moved back about two miles into their second position, leaving the first position weakly held, firing from the old positions with wandering batteries for deception. From our own experience we know that the attacker could not reach beyond the first position with his artillery fire of preparation; otherwise he would have expended still more ammunition and needed more time to prepare. The enemy who drew back could figure that the fire of preparation on his abandoned trenches and his vacated battery positions would be expended on thin air and that assaulting infantry would run into his intact second position.

The Austro-Hungarian attack against the Italian Front on 15 June, 1918, disregarding other factors, collapsed because of this method of displacement to the rear, which was the first time the Allies attempted this procedure on a large front. By reason of this same procedure, the attack of the German First and Third Armies collapsed east of Reims on 15 July, 1918. Here the French were not satisfied with a passive defense, but on the contrary, developed an artillery counter-attack—an organized counterattack by fire.

Incidentally, the German command on the West Front could have benefited had they made a study of the cause of the failure of the Austro-Hungarian offensive on the Piave River. The fact that a study had not been made is one of the characteristics of a war of coalition, in spite of the existence of a supreme military command. Later during the fighting in the Fall of 1918 the Germans did often utilize this displacement to the rear, allowing only a thin screen in front, leaving their main battle line 2 to 3 miles to the rear.

No counter-measures against this evasion to the rear were developed during the War, as it appeared impossible at that period to detect the deception in time. But had the deception been known, all that could be done would be to abstain from attacking. The problem of how to begin the attack would still remain unsolved.

It appears that not only did the World War develop the artillery attack to a high degree, but effective counter-measures were also developed; consequently an artillery attack of that period is hardly workable in the future.

So much for the World War. The problem now is how an attack would be conducted today, beginning from a meeting engagement. It must be known that differences of opinion start right here, because there are quite a few army commanders who are of the opinion that meeting engagements can not occur in the future.

Still it is true that today everybody is talking about the next war being one of surprise, in which a series of decisive battles would give victory. If we recollect the fundamentals of war are the same as in time immemorial, still we experienced a war that was conducted in trenches. One does not conduct a war as one wishes, but as conditions and means force one to conduct it.

Take for example an infantry division as organized today; both advance guards gaining contact in a meeting engagement would attack at once. The front of the division is about three miles and the division under cover of its advance guard would move into position of readiness and from there enter the attack.

The division artillery consists of: one regiment of light artillery with 9 batteries, one regiment of heavy artillery of 3 howitzers and 3 10-cm. gun batteries, and a battalion of 3 batteries of field guns. Total of 12 light and 6 medium batteries or 72 pieces. Within the division we have two rates of ammunition expenditure: 400 rounds for each of the 48 light and 250 rounds for each of the 24 medium field pieces.

Since it is desired for every attack to result in a penetration, and if we consider that counterattacks must be repelled, it is evident that only one rate of fire can be utilized in the artillery preparation. That is a total of 9,600 rounds for the light and 3,000 rounds for the medium caliber ammunition—a grand total of about 13,000 rounds.

Now the question arises—what are the artillery missions and how can they be solved? It must also be considered what changes will take place where the attack is not initiated from movement but from a prepared or organized position.

Counterbattery combat.—It would be erroneous to assume that any large parts of hostile artillery would be so poorly emplaced as to permit their being engaged by observed fire. Every firing battery can easily be discovered by aviators. This will amount to about half the hostile batteries; the other half

will remain silent until they open their defensive fire when the attack begins.

Under these circumstances the counterbattery firing must be preceded by registration fire with assistance of the artillery observation (spotting) plane. This registration fire requires time, and it may be necessary to augment the division air unit.

The silencing of the hostile guns could be more quickly accomplished by use of gas, but it is useless to hope for surprise because registration can not be conducted without detection. Probably the hostile artillery fire can be kept down as long as our own batteries remain silent. Coordination of firing presents difficulties because registration with the aid of air observation is not sufficiently accurate to eliminate errors due to changing of targets.

If we consider position warfare instead of a meeting engagement, then the batteries would all be registered and the greatest portion of the hostile batteries would be known, and a surprise fire with gas would be possible. Even here the air observer must help, not to check the range and strikes, but to check effect of the fire.

Conclusion.—It can be accepted that hostile artillery can be silenced, provided sufficient field pieces of the friendly troops are emplaced and utilized and provided the aggressor has air superiority. The air superiority is imperative for the attack.

It depends of course on each situation how many of our artillery forces should engage the hostile artillery. Generally speaking, at least one-third of the artillery (meaning a third of the ammunition) should be used.

Firing effect against hostile infantry.—This firing should be conducted in accordance with the experience derived from the World War and should be so complete that only a few of the hostile machine guns or other automatic weapons could fire during the infantry attack; otherwise the attack will fail. These war experiences can not be contradicted even though we apparently have forgotten them.

The infantry firepower will be considerably greater than in the last war. Even if we consider the normal equipment to be made up of high powered weapons, it will be necessary to consider the increase in the number of automatic weapons within each battalion.

The infantry has altered its combat formations in breadth and depth. It can be stated that its depth depends on its mission and extends somewhere between half and its entire lateral extension.

The infantry is trained to self-supportingly divide itself on the terrain, and if given time will prepare and coordinate minutely the field of fire, improve every machine-gun nest, and coordinate all its weapons with the artillery in breadth and depth. If the troops are expected to remain in their position several days, defense zones will be established and trenches with obstacles constructed.

What can we expect the artillery to do against such defenses?

It is imperative that the artillery, at least temporarily, keep the enemy down along the entire front to make the advance of our own infantry easier. Later in the zone of attack the artillery not only must assist the advance of its infantry by its fire of concentration, but it is necessary that it keep down any flanking attempt on either side by fire. It may also be necessary to assist adjacent troops by fire which, of course, will be somewhat weaker.

It is a certainty that the artillery will observe isolated hostile machine-gun nests by their firing or which are poorly camouflaged, but the majority of the machine-gun nests covering the terrain will not be known. Therefore the artillery can not indulge in direct fire but must content itself with searching fire. In doing this the fire effect is lessened, or better stated, the ammunition expenditure increases to produce the desired effect.

The 12 batteries of the division artillery which have the mission of supporting the infantry are insufficient for this. The number of batteries should at least be doubled. That is, the division artillery needs to be increased for the attack.

The attacks following contact from a meeting engagement belong to the same category.

Certainly an attack can be ordered with far weaker artillery. If this should happen at the beginning of hostilities, the infantry will pay for the lack of artillery support by excessive losses even though the attack succeeds, and it will not be able to exploit its initial success.

But let us take, for example, where the attack is carried on through; then the old difficulty—that of bringing up artillery at the proper time in sufficient numbers and well supplied with ammunition—comes up again, in order that the attack move forward faster in order to prevent the defender from organizing defensive zones.

Experience has proven that $2\frac{1}{2}$ to 3 miles are best distances for forward displacement of artillery.

The effective firing of those groups that are moved forward will depend on the assignment of the necessary artillery air observers; in spite of this it will be limited against infantry on the defense. Rapid changes of position by the artillery supplied with sufficient ammunition can only be accomplished by mechanized artillery. The short wave radio sender and receiver will solve the communications problem; the most important observers will be in the air.

The more vital the battle the greater will be the forces engaged; therefore, more powerful air corps units will be necessary to carry on the combat above the battlefield. The effective use of the air corps was felt in 1918 and was demonstrated in the destruction of the Piave bridges as well as against the Retzer Woods. Today aircraft is far more dangerous.

Shall we take the bombs, etc., which are dropped from the air without taking defensive measures and leave this combat to the antiaircraft batteries? Or shall we utilize the artillery, especially the light field pieces, to engage air targets the same as antiaircraft weapons?

Conclusion.—We must recognize that if an attack started with the means available at present and if we follow the methods used by the artillery in the battles of the World War, we have not made use of the lessons learned.

It is even more difficult to gain a rapid and decisive victory against machine guns today than it was during the last war. The assaulting infantry will again be overtaxed and will feel alone in its advance while it is slowly forcing its way through a defense which is equipped with many automatic weapons. Although difficulties start during the last 300 yards before reaching the enemy line, which is commonly referred to as the "Blue Zone" by the Italians, difficulties continued throughout the entire fight. The "Blue Zone" moves with the fight.

Some infantry believe if they have accompanying artillery, such as field pieces, howitzers, or mortars, that they make their mission easier. Truly these light calibers, provided they are not brought forward individually, can make the attack easier, but due to the superior number of hostile automatic weapons they can not silence them at the opportune moments. First, because the machine guns are not visible until the last moment when they open fire; and second, because they are mobile in combat and can change their positions at will.

No, such fighting can not force a decision, because the combat is too slow and permits the defender to organize new defenses.

The big problem—in fact the greatest problem—is whether machine guns can still be subdued by manpower or whether this can only be accomplished by mobile armored weapons.

The World War also inaugurated the use of the tank. The tank, due to its armor plate, is protected against the effect of all the automatic and magazine weapons possessed by the infantry. The tank solved the insolvable problem of rapidly moving combatants through a battlefield on which are placed numerous machine guns, putting the majority of them out of action. The infantry accompanying the tanks must then exploit this accomplishment and capture the machine gunners.

This also alters the task of the assault artillery. The necessity of destroying the trench zone prior to the attack suddenly disappeared. The artillery fire against an enemy position would cause the terrain to be covered with shell holes which would slow up the advance of the tanks.

This would make it possible to hold a sector with far less artillery, which in turn means a lesser number of days for the moving in of artillery and ammunition. The tasks left for the artillery consist, then, of keeping down the fire of the hostile batteries and providing a rolling barrage for the first attack wave which consists of the tanks and the accompanying infantry.

This essential shrinking of the firing schedule permits the artillery to discontinue the preparatory fire. In this way we can again get a tactical surprise at the beginning of the attack. At the sudden opening of artillery fire, tanks will forge forward over the obstacles into the hostile positions.

Another material improvement is that the troops in the front line are not aware of the impending attack until the last days, because all preparations therefor are carried on in rear. For example, the Germans were unable to gain any information from the 240 British prisoners captured on 6 August just before the battle of Amiens, because these men did not know that both their divisions were to attack on 8 August.

That is the reason why the three tank attacks were the only attacks in the last year of the war where the attacker had the full advantage of surprise on his side.

By its ability to eliminate machine guns the entry of the tanks gave the battle an entirely different picture, that of a rapidly moving combat leading up to a complete decision.

Even in the tank attack a fundamental question arises—should the attack continue when the end of the rolling barrage has been reached? To this the war has not given an answer, because the tanks of that period were slow and tied down to the infantry during the forward movement, so when the end of the rolling barrage was reached, the infantry was too exhausted for further advance.

Only once did this problem appear very clearly and that was at Soissons on 18 July, 1918, when the French failed to exploit their penetration. It took the French hours to displace sufficient artillery 3 miles forward in order to continue the attack against the German divisions in the second line.

The possibilities of the use of armored vehicles in modern combat become more and more clear. The tank will not only serve as a battering ram for the infantry attack, but will also with other auxiliary weapons take over the shock mission of the assaulting cavalry.

The present-day tank possesses a much higher speed than the tank of the war period; therefore it demands corresponding speed from all other weapons with which it is to cooperate in combat and of which the artillery is the most important weapon.

The artillery must find ways and means to increase its mobility on the battlefield. This can not be accomplished without mechanical traction. Today the attacker as well as the defender needs mobility, the latter in order to quickly

close any hostile wedge which has been driven in his front or to quickly change his defensive front.

Although the tank has taken over some of the artillery's tasks, it has also given the artillery new tasks. The only means of defense against armored vehicles is the armor-piercing high explosive shell.

There will be many changes in the picture of a tank attack; it will take on the appearance of a cavalry battle. This will bring on many changes in the use of artillery. The massing of artillery must stop; it is too slow and awkward. Small energetic artillery groups capable of quick decisions and not tied down with many orders will more or less be required to fight independently either in attack or defense.

The density of the artillery will be determined by its ability to convert itself tactically and technically to its new task and mobility. If the artillery can not or will not solve this problem, then other weapons must step in; for example, the tank and the airplane.

It is possible that in the future the principal mission of the artillery will not be the fire of destruction against trenches but the rapid action against armored squadrons and airplanes. If this is the case then the light field piece again becomes important and because of its construction it can be converted into an anti-aircraft weapon.

At the present time everything is in the process of changing, the artillery being subject to the greatest changes.

MOROCCAN REMINISCENCES

By Major Jerry V. Matejka, Signal Corps

France came into contact with Morocco in 1859 and 1860 at the time of the colonization of Algeria. General Lyautey occupied Colomb-Bechar in 1903 and Bergurent in 1904 in order to protect the western Algerian frontier from assaults of the Moroccans.

The Algeiras Conference of 1906 established equal rights for the Great Powers in Morocco. An agreement between France and Germany concluded in 1911 gave Germany a part of French Congo, after which France authorized all possible activities in Morocco.

Abstract of a Lecture to Colombian officers by General Klecanda, Czechoslovakian Army.

Sultan Mulay Hafid accepted a French protectorate in 1912 for southern and central Morocco and a Spanish protectorate for the north coast. General Lyautey was named the resident (commissioner) and came to Fez in May. He was immediately surrounded by 20,000 Berbers. He repulsed the attack and in the summers of 1913 and 1914 undertook military operations in all directions. On 17 May, 1914, two French detachments advancing on the town of Taza, one from the east and the other from the west, joined their forces and in this manner completed the pacification of central Morocco.

At the beginning of the World War the French Government recalled the bulk of the forces from Africa and gave General Lyautey the right to evacuate the entire country with the exception of the harbor.

During this difficult period the General showed his genius and deep knowledge of the psychology of this country. Having no troops, he acted as if he had an abundance of them, conducting himself according to the principle: "It is better to make a timely show of force than to be forced to use it." He requested from France the oldest battalions of home guards. The old bearded reservists, fathers of peaceful families, dressed in motley uniforms, gave the impression of experienced troopers.

Lyautey ordered exhibitions, arranged for noisy celebrations, and the performances were made more magnificent as the situation became more critical on the French front. He permitted the chiefs of hostile mountain tribes to take part in the celebrations, overwhelmed them with attention, and strove to gain their friendship.

During the war, state credits were readily obtained. The General used them for developing the land, building roads, establishing domestic industry, and improving the living conditions of the native inhabitants.

The well-designed conceptions of the General made up for the shortage of troops. His influence spread to new territories. The secret of Lyautey's success was a profound knowledge of the souls of the natives, his broadmindedness, and the excellent organization of his intelligence and propaganda services. He covered Morocco with a network of intelligence centers. Young officers sent to native tribes came to be their advisers, doctors, spreaders of civilization, and indispensable friends. They were needed and therefore became popular.

This was a select school for the teaching of independence and responsibility to the young officers. They were often successful in creating around themselves volunteer units of natives and in keeping unfriendly neighbors at a respectful distance.

The intelligence service was strengthened in the vicinity of the fortifications and camps. Good intersecting roads permitted mutual support between detachments.

Thanks to Lyautey's organization, Morocco remained tranquil during the entire war. Attempts of enemies to stir rebellion were in vain.

INSURRECTION OF ABD EL KRIM IN 1925

The Spanish were not successful in maintaining peace in the north. French writers saw that the Spanish had made the error of permitting the growth of the authority of the delegate sultan in the Spanish zone to the detriment of that same sultan. Later the misfortune of General Navarro's troops had a fatal influence. His column of 20,000 men was passing through the Valley of Death. Its advance and flank guards had a meeting engagement with Riffs from the mountain ridges. A counterattack was delayed. Time was lost. There was no water. The Riffs proposed an armistice and a free departure of the disarmed (Spanish) troops. The General accepted. In the meantime a small portion of the Spanish troops fought their way into the French zone, while the remainder who laid down their arms were massacred. This victory of the Riffs, due to the indecision of European politics and likewise the advice of certain European friends, encouraged Abd el Krim to attempt an uprising in Morocco.

At the beginning of April, 1925, 600 Riffs by a sudden attack penetrated to the south between French strongholds in the Riffian hills and persuaded subject tribes to join them in the insurrection. On a front of about 170 miles, Lyautey could place only 9 battalions. The insurrection was spreading. Reinforcements were arriving from France very slowly. The Marshal was recalled.

Toward the end of April the French created from ten battalions, three expeditionary columns with which they penetrated into the lands of the rebels, freed a portion of the besieged strong points, and provided detachments for the

fortifications along the Ouergh River. In June General Dau-gand, designated commander of the operating forces, had 53 battalions, 14 squadrons (cavalry), 30 batteries, and 17 squadrons (air). After severe engagements he succeeded in stopping the spread of the insurrection, in driving the rebels north of the road from Tangiers to Rabat and to the north of the towns of Fez and Taza, and, in this way, in freeing the traffic artery in rear of the French troops.

The Riffs were sanguinary fighters. They used the advantage of their widely-flung mountains. They surprised with fire and sudden, unexpected attacks. They would not present a target. By well-directed fire they forced French battalions to deploy and launch a true attack and, in the last moment before the assault, disappeared in order to repeat the action from the next nearest ridge. Excellent marchers, abstemious, they were not dependent upon administrative services. A few figs were sufficient for them, while European soldiers needed a service of supply.

The fanatic Riffs incited the religious fervor of neighboring tribes. They took them in hand and forced them to fight against the Europeans. Abd el Krim succeeded in concentrating 85,000 men. The Riff front was exceedingly elastic, and only in a few places was it strengthened with fortifications. In other places excellent riflemen carried on the combat by delaying action, a junction of forces after counterattacks, and ambushes.

Marshal Petain flew to Morocco in June. He hastened the arrival of reserves and matériel and created six infantry divisions and 20 regiments of cavalry. He ordered a general attack.

In a few days the Riffs were driven into the mountains from the areas in which they had successfully rebelled. There began a regular advance into the Riff mountains which lasted the entire spring of 1926.

A reinforced brigade advanced on each axis of advance. The occupied ridge was immediately fortified. A row of strong points visible one from another and joined by roads were constructed. Crossings over brooks were paved with large flat stones so that wagons could cross them even in the rainy season.

When the fortification of the ridge was completed, the cavalry occupied the next one to the north and protected the labor columns which extended the roads. Artillery was in position on the old position ready to support the cavalry and to protect the labor columns. Upon completion of the road, the brigade advanced and fortified the occupied ridge.

While the troops advanced according to the Foch method: "like a parrot who climbs with bill and claw," the roads in the rear were being finished and supply bases were being moved forward.

The methodical advance of the French troops induced Abd el Krim to negotiate. He sent his representatives to the town of Ujda and after longer negotiations surrendered himself.

CONCLUSIONS

The Riff campaign presents several lessons. The intelligence and propaganda services are most important in connection with colonial penetration. The work of young officers as envoys of civilization is one of the most valuable missions. Humanity and advice extended to the natives, attention to their welfare, and kindness meet with the best success. Newly-won friends come to be loyal guides and protectors, warning of threatening misfortune and helping by self-sacrifice to repel attacks.

It is well to show strength in order that its use be not forced.

Initial economy in the numbers of an occupying force is paid for dearly later. If it is necessary to use force, it is necessary to decide quickly and concentrate all means. Reinforcements which accrue slowly and in dribblets decide nothing.

It is out of the question to improvise military operations. They require foresight and absolutely precise operation of administrative services.

"The art of conquering is nothing without the art of subsisting."

THE SARYKAMYCH OPERATION

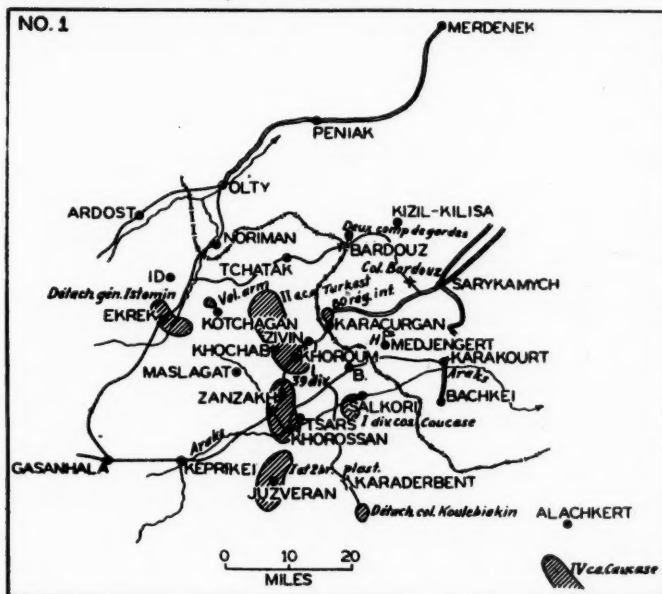
By Captain M.D. Taylor, Field Artillery

The Sarykamych operation was an episode in the war on the Caucasian front between Russians and Turks in December,

Abstracted from *Revue Militaire Francaise*, February, March, 1935. "L'opération de Sarykamych," by General Inostransev

1914. It involved a wide envelopment by the Turkish forces, which just missed success, and the counteroffensive executed by the Russians. It illustrates maneuver on a large scale in difficult terrain under open warfare conditions.

The terrain in the Caucasus is rugged and barren. The ridges rise to an average height of about 6,000 feet; in some places they reach 9,600 feet. The climate is severe in winter. During the operations to be described, the snowfall was very heavy. The communications in the area were deficient. On the Russian side of the frontier, a single railroad led from Tiflis through Kars to Sarykamych, where it ended. The only highways were in Russian territory, there being three: the first Kars—Sarykamych—Karakourt; the second, Kars—Sarykamych—Karaourgan; the third, Kars—Olty. On the Turkish side there was the single improved road, Erzeroum—Gassankala. The other routes of circulation were merely trails not suitable for wheeled transport. Consequently, the movement of large bodies of troops, their control, supply, and evacuation were very difficult on both sides.



Map No. 1

The Russian Army of the Caucasus on the outbreak of war consisted of:

- I Corps (General Berchman):
 - 20th Division
 - 39th Division
 - 2 brigades (11 battalions) of "plastouns" (dismounted Cossacks from Kouban)
 - Several regiments of Cossack cavalry
- IV Corps (General Oganovski) Army troops
- II Corps.

These troops were divided between the western and eastern sectors of the Caucasus front. The former (Erzeroum) sector was given to General Berchman. It is here that the operations which are being described took place.

General Berchman's forces were disposed as follows:

- 8 battalions under General Istomin at Olty
- 25 battalions under General Baratov at Sarykamych
- 5 battalions in reserve at Kars
- 5 battalions in reserve at Kaghizman.

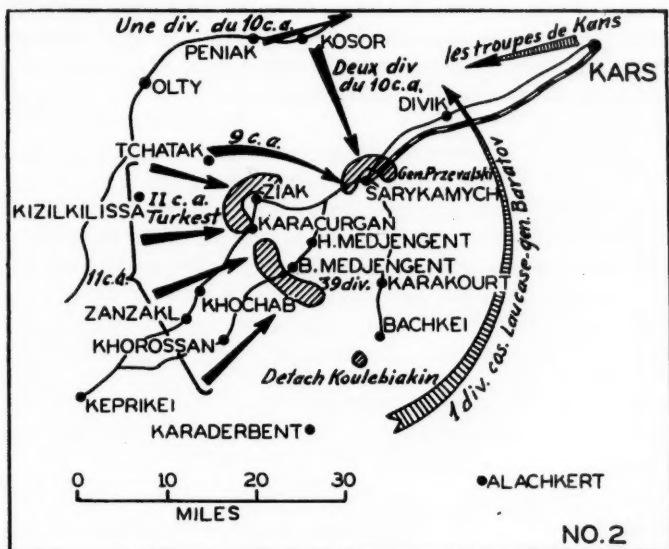
At the outbreak of war these forces advanced by converging routes on Erzeroum. The Olty force was delayed on 7 November by supply difficulties, leaving Baratov in an exposed position at Keprikei. The Turks (the Third Army consisting of the IX, X, and XI Corps—nine divisions in all) took advantage of the situation and attacked Keprikei on 14 November, driving the Russians back to the general line: Ekrek—Karaderbent, where the situation stabilized. Meanwhile the II Corps reinforced General Berchman. The dispositions by the middle of December, from right to left, were as follows:

- The Istomin detachment near Ekrek
 - 1st Brigade
 - 1 battalion of artillery, 20th Division Cossack regiment
 - II Corps blocking the road to Sarykamych
 - 39th Division (General de Witt) in Zanzah—Khorassan area
 - 1st and 2d Plastoun Brigades (General Prjevalski) near Juzveran
- Detachment of Colonel Koulebiakin at the Karaderbent defile:
 - 2 battalions, 20th Division
 - 1 mountain battery
 - 1 Cossack regiment.

A Cossack division was in cantonments about Salkori. In rear at Karaourgan the 80th Regiment was in general reserve while farther to the rear were some territorial units and the 3d Chasseur Brigade.

Opposite the Russians the positions were occupied by Kurd partisans with the Third Army held in rear. The army

commander was Hassan-Izet-Pacha with the German Major Guse as chief of staff. Many Germans were interspersed through the staff.



Map No. 2

Early in December Enver Pacha arrived at the Third Army with the German General von Schellendorf to take personal charge of a Turkish offensive. The plan of maneuver was as follows: The X Reserve Corps and part of the IX Corps were to fix the bulk of the Russian army by a frontal attack. The remainder of the IX Corps and the X (active) Corps were to fall on the Olty detachment of General Istomin and drive it to the northeast. While one division of the X Corps would pursue, the IX Corps and the remaining two divisions of the X Corps were to converge on Sarykamych in the Russian rear and encircle the army of General Berchman. The plan was bold and aimed at decisive results. It was defective in that the terrain to be crossed by the IX and X Corps was very mountainous, traversed only by trails which, difficult in good weather, were now covered by heavy snows.

On 19 December Istomin reported unusual activity among the Turks on his front. By 21 December he had proof that

the Turks had been reinforced. On 23 December he was forced out of his position by two divisions of the X Corps and retreated. To relieve the pressure on Istomin, Berchman ordered an attack by the II Corps and 39th Division on 23 December, but the attack was quickly stopped by the Turks. By the evening of 24 December Istomin was in full retreat on Merdenek, leaving the Russian right completely exposed to the Turkish envelopment.

The news of these combats arriving at Russian general headquarters at Tiflis, General Mychlaevski accompanied by General Joudenitch was sent to take command of the front. Meanwhile the Turks were pushing forward their enveloping mass which was within 12 miles of Sarykamych on 24 December. It was not until late on 27 December, with the Turks within 3 miles of their goal, that Mychlaevski learned the gravity of his situation. At that time five enemy divisions commanded by Enver Pacha in person were so near that their advance guards had already cut the railway between Kars and Sarykamych. The Russian commander hastily ordered:

(a) The II Corps and 39th Division to halt the frontal advance of the Turks on the line: Ziak—Karaourgan—Medjengert.

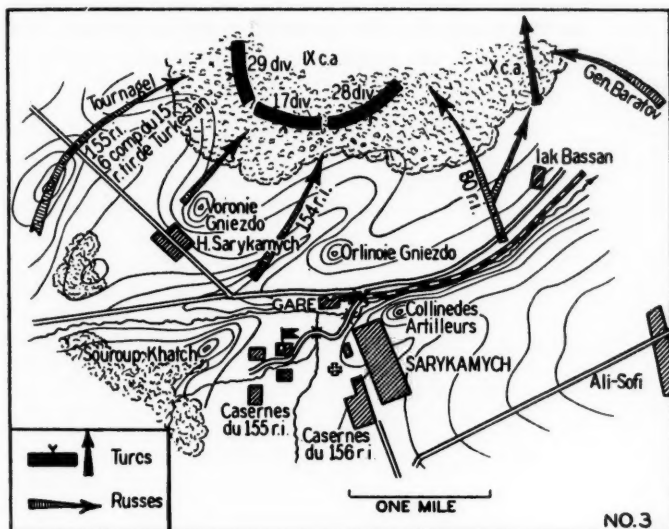
(b) The 1st Plastoun Brigade to move by forced marches to Sarykamych, where its commander, Prjevalski, would take command of all troops defending this critical point.

(c) General Baratov with the 1st Cossack Division (less one regiment) and the 2d Plastoun Brigade to pass to the east of Sarykamych and, reinforced by elements from Kars, to fall on the marching flank of the Turkish envelopment.

This regroupment would require several days. Meanwhile Sarykamych on 26 December seemed doomed to capture before the regroupment could be effected. Losing confidence, General Mychlaevski gave the frontal defense to Joudenitch, the defense of Sarykamych to Berchman, and quit the army for Tiflis, where he hoped to constitute a new army.

However, Sarykamych did not fall. On 26 December it was defended only by an improvised force under Colonel Baukretov consisting of two territorial battalions, a battalion of the 18th Chasseurs, and two pieces of artillery. Aided by the strong terrain, these forces held out against the Turkish

77th and 29th Divisions during 26 December and were reinforced by the 80th Infantry during the night. During 27 December the defenders of Sarykamych were almost encircled, but the town held out. The Turks wasted the 28th Division in local attacks. At nightfall 5 Plastoun battalions under Prjevalski arrived, and the worst moments for the Russians were over. Meanwhile the frontal retirement was being carried out in good order.



Map No. 3

By 30 December reinforcements from the retiring front allowed Prjevalski to begin counterattacks about Sarykamych, most of which were directed at the Bardouz defile on the Turkish right. Gradually the Turks were forced on the defensive about Sarykamych. On 4 January the forces of Prjevalski passed to the counteroffensive in conjunction with an attack of the Turkish flank by General Baratov who, with eleven battalions and fourteen sotnias, had at length reached his attack positions. By 2:00 PM, 4 January, the Turkish resistance was broken. The Turks were encircled and the commanders of the IX Corps and the 17th, 28th, and 29th Divi-

sions were captured. Of the 90,000 Turks who began the campaign only 12,000 escaped death or capture.

Enver Pacha had erred in applying rigidly the Schlieffen formula of envelopment without giving due consideration to the factor terrain. The communications of the enveloping force were wholly inadequate, and the supply system soon broke down. Operating on interior lines over better communications, the Russians were eventually able to envelop the envelopment and thus create a disaster for the Turkish Third Army. Every maneuver can be met by a countermaneuver which will succeed if the opportunity is not missed to organize it.

Section 3

DIRECTORY OF PERIODICALS

Included in this directory are only those periodicals from which articles have been selected.

See also, Section 8, "List of Periodicals Indexed and Key to Abbreviations."

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Section 4

CATALOG OF SELECTED PERIODICAL ARTICLES

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4 May 1935

- (1) LONGEVITY PAY CREDIT

11 May 1935

- (2) OTHER ARMS OPPOSING SPECIAL AIR PROMOTION

18 May 1935

- (3) FAVOR USMA INCREASE; COMMISSIONED RESERVES

- (4) SPECIAL AIR PROMOTION HIT BY INFANTRY CHIEF

25 May 1935

- (5) PASS WEST POINT BILL

- (6) PAY OF AIR OFFICERS TEMPORARILY ADVANCED IN RANK

1 June 1935

- (7) ARMY PROMOTION BILL

- (8) LONGEVITY CREDIT BILL ASSURED OF PASSAGE

8 June 1935

- (9) WEST POINT APPOINTMENTS

15 June 1935

- (10) HOUSE MILITARY COMMITTEE BEGINS HEARINGS ON ARMY PROMOTION BILL; REVISION OPPOSED

- (11) GENERAL MACARTHUR HONORED

22 June 1935

- (12) TUESDAY SET FOR ACTION ON ARMY PROMOTION BILL

29 June 1935

- (13) APPROVE ARMY CONSTRUCTION

- (14) ARMY PROMOTION BILL MAY PASS ON MONDAY

- (15) ARMY CONSTRUCTION AND ITS RELATION TO GENERAL BUSINESS.
Brig. General Guiney

- (16) FUELS AND LUBRICANTS. Lieutenant Murdaugh, USN

- (17) PURCHASE OF FOOD FOR THE ARMY. Major General Bash

6 July 1935

- (18) PASSAGE ASSURED, ARMY BILL WAITS HOUSE ACTION

- (19) PROCUREMENT ACTIVITIES OF THE ORDNANCE DEPARTMENT.
Brig. General Tschappat

13 July 1935

- (20) RULE ISSUED FOR ARMY PROMOTION LEGISLATION

20 July 1935

- (21) ARMY PREPARES TO PUT PROMOTIONS IN EFFECT

- (22) GENERAL MACARTHUR SPEAKS

- (23) THE SELECTION SYSTEM OF PROMOTION. (Editorial)

27 July 1935

- (24) PRESIDENT REITERATES APPROVAL OF ARMY BILL
- (25) NATIONAL MUNITIONS ACT

ARMY AND NAVY REGISTER

4 May 1935

- (1) THE LONGEVITY BILL
- (2) CHALLENGES ATTACK ON U.S.M.A. Major General Connor

11 May 1935

- (3) TO PREVENT WAR PROFITEERING
- (4) NAVAL APPROPRIATION BILL

18 May 1935

- (5) ARMY MANEUVERS
- (6) TRANSPORTATION OF CAVALRY HORSES
- (7) FRANCE COMPLETES DEFENSES
- (8) INFANTRY MOBILIZATION SCHEDULES

25 May 1935

- (9) PAY OF TEMPORARY RANK
- (10) ADDITIONAL U.S.M.A. CADETS

1 June 1935

- (11) UPHOLDS NATIONAL DEFENSE
- (12) ENLISTMENT OF CADETS REJECTED

8 June 1935

- (13) ARMY PROMOTION
- (14) LONGEVITY PAY RESTORED

15 June 1935

- (15) ORGANIZATION OF NAVAL FORCES
- (16) ARMY PROMOTION

22 June 1935

- (17) C. AND G.S. SCHOOL GRADUATION
- (18) ARMY AIR CORPS STATIONS

29 June 1935

- (19) ARMY PROMOTION BILL
- (20) LONGEVITY INCREASE
- (21) ARMY INDUSTRIAL COLLEGE

6 July 1935

- (22) SALUTE A TRADITIONAL COURTESY
- (23) NAVY SHIPBUILDING

13 July 1935

- (24) FLYING PROFICIENCY BOARD

20 July 1935

- (25) LEGISLATIVE GAG ON OFFICERS
- (26) BOARD OF VISITORS, U.S.M.A.
- (27) FLIGHT SURGEONS

27 July 1935

- (28) PRESIDENT FAVORS ARMY BILL

ARMY MEDICAL BULLETIN

April 1935

- (1) MOBILIZATION TYPE HOSPITALS. Lieut. Colonel Kramer
- (2) THE INFANTRY BATTALION AND ITS MEDICAL SERVICE
- (3) MEDICAL SUPPLY IN PEACE TIME

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- (4) PHYSICAL REQUIREMENTS FOR FLYING TRAINING. Lieut. Colonel Jones
(5) DEATHS AMONG AMERICAN TROOPS DURING OUR MAJOR WARS. Lieut. Colonel Lull

ARMY, NAVY AND AIR FORCE GAZETTE (Great Britain)

3 January 1935

- (1) GERMAN RETREAT OF SEPTEMBER 7, 1914. Colonel Grasset
(2) AMERICA'S GREATEST SOLDIER. Major-General Fuller

10 January 1935

- (3) TECHNICAL TRENDS OF FRENCH MILITARY AVIATION. Scott-Hall

17 January 1935

- (4) SMOKE SCREENS VISIBLE OR INVISIBLE. Major Murphy
(5) THE INFANTRY EXPERIMENT. By Festubert

24 January 1935

- (6) 1935, ABROAD. Walton
(7) REVISION OF ARMY TRAINING METHODS IN U.S.
(8) MILITARY ALLEGIANCE AND THE LEAGUE OF NATIONS. Major Parkes

31 January 1935

- (9) CANADIAN DEFENCE DEPARTMENT SOLVES UNEMPLOYMENT
(10) THE "OFFICIAL HISTORY" OF MARCH, 1918. Captain Liddell Hart

7 February 1935

- (11) GERMAN VIEW ON SEA POWER. Vice-Admiral Gross, German Navy (Retd.)
(12) COLONEL GRASSET AND OUR OFFICIAL HISTORY. (Letter to the Editor)

14 February 1935

- (13) TWO "APPRECIATIONS"—IDEALISTIC AND REALISTIC. A LESSON IN THE SCIENTIFIC APPROACH TO PROBLEMS—FROM THE OFFICIAL HISTORY OF 1918. Captain Liddell Hart

- (14) THE LORDS OF THE ATLAS SUBMIT. Price

21 February 1935

- (15) NOTES ON ABYSSINIA. Major-General Gwynn
(16) ADOWA, 1896

28 February 1935

- (17) THE BATTLE OF THE MARNE. COLONEL GRASSET SUMS UP

7 March 1935

- (18) THE SOVIET ARMED FORCES IN 1935. White
(19) HUMANE USES OF THE CHEMICAL WEAPON. Major Murphy
(20) THE AIR ESTIMATES

14 March 1935

- (21) ARMY HORSE WORSHIP. Major-General Fuller
(22) A BATTLE IN THE CHACO. Lindsay

4 April 1935

- (23) THE COMBINED FLEETS' EXERCISES

11 April 1935

- (24) THE ARMY AND ITS SUBMARINE. By Festubert
(25) MILITARY CRITICISM AND BRITISH STRATEGY.—I. Colonel Beadon

18 April 1935

- (26) MILITARY CRITICISM AND BRITISH STRATEGY.—II. Colonel Beadon

26 April 1935

- (27) A NEW DISCIPLINE FOR OUR SOLDIERS. Major-General Fuller
- (28) TERRITORIAL DIVISIONS. Major-General Rowan-Robinson
- (29) THE NAVY ON THE YANGTSE. NANKING INCIDENT RECALLED

2 May 1935

- (30) THE ARMY, 1910-1935. Major-General Fuller
- (31) TWENTY-FIVE YEARS OF THE NAVY. By "Navalis"

9 May 1935

- (32) RUSSIAN AIR STRENGTH AND WEAKNESS. Captain Cloud
- (33) THE TRAGEDY OF OUR DEFENCES. EXCERPTS FROM THE HOUSE OF COMMONS DEBATE
- (34) CANADIAN MILITIA TRAINING, 1935

16 May 1935

- (35) THE FACTS OF BRITAIN'S STRATEGY. Captain Liddell Hart
- (36) AIR POWER AND THE SEA. Admiral Kerr

23 May 1935

- (37) ABYSSINIAN REMINISCENCE. Colonel Cra'ster, Retired
- (38) MARSHAL PILSUDSKI AND THE RUSSO-POLISH WAR OF 1920. Lieut.-Colonel de Watteville

30 May 1935

- (39) FACTS AND MILITARY CRITICISM. Captain Liddell Hart
- (40) DEBATES ON AIR EXPANSION. EXCERPTS FROM THE HOUSE OF LORDS DEBATE
- (41) R. E. LEE. Major-General Fuller

6 June 1935

- (42) AIR DEFENCE. Colonel Hill
- (43) THE R.A.F. AND KITE BALLOONS. By the Hon. de Moleyns, Editor of "The Airship"
- (44) THE PSYCHOLOGICAL SHIELD AND WEAPON. Captain Warburton

13 June 1935

- (45) BRITISH STRATEGY. Major-General Fuller

20 June 1935

- (46) WHAT WE WANT FROM A NAVAL CONFERENCE. By "Navalis"
- (47) SLOW TANKS AND INFANTRY. By "Saracen"

27 June 1935

- (48) THE ANGLO-GERMAN AGREEMENT. By "Navalis"

4 July 1935

- (49) THE ANGLO-GERMAN NAVAL AGREEMENT. HOUSE OF LORDS DEBATE
- (50) MINISTERS AND COMMITTEES ON SERVICE CO-ORDINATION. (I) Captain Kennedy

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March-April 1935

- (1) AMERICAN MUNITIONS. Honorable George H. Dern
- (2) THE CAUSE AND CURE OF WAR. Major General Hagood
- (3) THE DEFENSE ACT, SECTION 5-A. Lieut. Colonel McFarland
- (4) BROAD-MINDED MAHAN. Captain W.D. Puleston, U.S. Navy
- (5) EUROPE LOOKS AT CHEMICAL WARFARE. Captain Waitt
- (6) ORGANIZATION AND OPERATION OF THE ORDNANCE DEPARTMENT. Part I. Major Marsh

May-June 1935

- (7) MECHANIZED FORCES. A STUDY OF SUPPLY AND EVACUATION. (I) Captain Christmas

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- (8) CHURCHILL'S "MARLBOROUGH." SOME RUNNING REFLECTIONS ON THE FINER POINTS OF GENERALSHIP. Captain Liddell Hart
- (9) THE BOW AS A MISSILE WEAPON. A STUDY OF POWER, RANGE AND RAPIDITY OF FIRE. Vice Admiral Rodgers
- (10) THE END OF DISARMAMENT. FURTHER EFFORTS FOR LIMITATION MUST BE REALISTIC. Sir Charles Petrie
- (11) PRODUCTION DESIGN OF ORDNANCE. PRECISE DRAWINGS AND SPECIFICATIONS ARE ESSENTIAL. Pedersen
- (12) CARTS BEFORE HORSES. (An editorial)
- (13) ORGANIZATION AND OPERATION OF THE ORDNANCE DEPARTMENT. Part II. Major Marsh

ARMY QUARTERLY (Great Britain)

July 1935

- (1) THE PSYCHOLOGY OF A COMMANDER. GENERAL R.E. LEE: FROM GETTYSBURG TO APPOMATTOX. Captain Liddell Hart
- (2) THE NATIONAL GUARD OF THE UNITED STATES OF AMERICA. Lieut. Colonel Scammell, U.S. N.G.
- (3) THE HANDLING OF A REAR-GUARD IN CLOSE CONTACT WITH THE ENEMY. Captain Grant
- (4) THE JAPANESE ARMY AS A FIGHTING FORCE. Captain Kennedy
- (5) "THIS MAPPING BUSINESS." By O's R. & B
- (6) THE FRENCH OFFICIAL HISTORY. VERDUN AND THE SOMME. 1ST OF MAY-3RD OF SEPTEMBER, 1916
- (7) THE TRAINING OF THE TERRITORIAL ARMY. Captain Latter
- (8) THE FIRST GAS ATTACK: A GERMAN EXPERT'S VIEW
- (9) INFANTRY DRILL. By "Auspex" and "Ex-Guardee"
- (10) SOME EXPERIENCES IN RUSSIA, 1919. A TRUE STORY. Captain Austin

BULLETIN BELGE DES SCIENCES MILITAIRES (Belgium)

By Lieutenant R.E. Moore, Infantry

January 1935

- (1) PAGES D'HISTOIRE DE L'ARMÉE BELGE AU COURS DE LA GUERRE 1914-1918.—DE L'YSER À L'ESCAUT AVEC LES 1ER ET 4E RÉGIMENTS DE CHASSEURS À PIED EN AUTOMNE 1918. [History of the Belgian Army in the World War. From the Yser to the Escaut with the 1st and 4th Regiments of light infantry in the fall of 1918.] By V.F.
- (2) LA GUERRE DE LA SUCCESSION D'ESPAGNE ET SES ENSEIGNEMENTS TOUJOURS VIVANTS. [The War of the Spanish Succession and its ever living lessons.] Colonel Van Egroo

This war lasted some fourteen years and covered a great deal of territory in Europe, the various theaters of operations being in Flanders, along the Rhine, in Bavaria, Italy, and Spain. However, as the author points out, the theater of operations in the north is of particular interest to the Belgians, not only because it is close home, but also because of the comparisons of actions in the same territory during the World War.

Before giving a brief account of each of the various phases of the war, the author discusses the tactics used by the armies of the early eighteenth century.

- (3) LES PROCÉDÉS DE COMBAT DE L'INFANTERIE ALLEMANDE. [The combat principles of the German infantry.] (I) Major Wanty

The Belgians have borrowed from their neighbors, the Germans, some of their simple combat principles and experimented with them on Belgian terrain. Major Wanty presents here some of the results of this work.

- (4) VUE D'ENSEMBLE DE QUELQUES APPLICATIONS POSSIBLES DE LA PSYCHOTECHNIQUE À L'ARMÉE. [A comprehensive view of some possible applications of technocracy in the army.] (I) Lieutenant Mente

This article was written with the idea of pointing out some of the possible applications of "technocracy" in the army. Several Belgian

army officers have experimented along these lines with Belgian soldiers, and a few of them have written articles on the results of their experiments.

February 1935

(5) PAGES D'HISTOIRE DE L'ARMÉE BELGE AU COURS DE LA GUERRE 1914-1918.—OPÉRATIONS DE LA COMPAGNIE SPÉCIALE DE DESTRUCTION. [History of the Belgian Army in the World War. Operations of a special demolition company] (I) Colonel Delfosse

(6) LES PROCÉDÉS DE COMBAT DE L'INFANTERIE ALLEMANDS. LE COMBAT DE LA COMPAGNIE ET DU PELOTON. [The combat principles of the German infantry. Company and platoon combat.] (II) Major Wanty

Dividing his article into four chapters, Major Wanty discusses in the first chapter the organization of the German rifle company. The company is composed of three platoons and an extra section. Each platoon is comprised of three combat groups of from thirteen to fifteen men each. The extra section constitutes a company headquarters.

The second chapter deals with the company and the platoon in the advance guard. It is interesting to note that the German regulations prescribe that the advance guard shall protect the main body not only from surprises on the ground, but also from the air. Special observers are sent out for this purpose. A map problem in this chapter serves to illustrate the actions of the advance guard in an encounter with the enemy. In the event that a quick, forceful attack would fail, time must be taken to place the artillery and some of the heavier infantry weapons in place.

In chapter three, the author discusses this phase of an encounter. The advantage of using the artillery and heavier infantry weapons is that while they are being placed in position, there is sufficient time to analyze the enemy position. The disadvantage is the delay that it causes.

The fourth chapter describes the various methods of attack that may be used by the infantry company after the heavier weapons have opened fire.

(7) UN REDRESSEMENT STRATÉGIQUE: LA MANOEUVRE DU CSER, 12-19 AOÛT 1914. [A strategic movement: The maneuver of the Cser, 12-19 August, 1914.] Lieut. Colonel Desoil

This action took place in the vicinity of a hill known as the Cser and located on the east bank of the Drina River.

On 12 August, 1914, the Serbs with eleven divisions of infantry and one division of cavalry had taken up a defensive position south of the Danube, prepared to resist an invasion by Austria-Hungary from the north valley of the Morava. The valley of the Morava being the richest and most densely populated section of the country, it seemed logical that this would be the route of invasion. However, the Austro-Hungarian Second Army, situated to the north of the Danube, was suddenly ordered north to the Russian frontier, leaving only the Fifth and Sixth Armies on the west bank of the Drina threatening the Serbians. General Frank, in command of the Austro-Hungarian Fifth Army, decided to cross the Drina near the the Cser without waiting for the Sixth Army, which was located farther to the south.

This article describes the manner in which the Serbians maneuvered their armies to the west after having been originally facing north and how on 19 August, 1914, they finally repelled the invasion of the Austro-Hungarian Fifth Army.

(8) LES CHEMINS DE FER ALLEMANDS EN 1914. [The German railroads in 1914.] (I) Captain Bedoret

The problems which confronted Germany in 1914 in regard to her railroad systems were numerous. One of the most difficult tasks was the coordination of the railroads so that they might take care of both the military and economic needs of the country.

For many years prior to 1914, each state in Germany operated and controlled its own little networks of railroads. The result was that the Reich had to step in in many cases and subsidize these smaller networks while it altered them to conform to the military needs of the country.

Many more bridges were built than were necessary in time of peace, and double tracks were laid wherever possible, whether needed or not. The coal situation was a serious problem. During the days of mobilization, the railroads would not be able to take care of their own needs in this regard and those of industry at the same time. The use of electrically operated railroads was contemplated for some time, but the idea was discarded because of the lack of trained operators and the fact that the destruction of the source of power would throw a whole network out of operation. The problem was finally settled by establishing large coal dumps before mobilization in the large cities and industrial centers.

These and many other problems concerning the railroads confronted Germany in 1914. An article appears in the March issue of the "Bulletin Belge des Sciences Militaires" telling the story of how the railroads actually functioned during the War.

(9) VUE D'ENSEMBLE DE QUELQUES APPLICATIONS POSSIBLES DE LA PSYCHOTECHNIQUE À L'ARMÉE. [A comprehensive view of some possible applications of technocracy in the army.] (II) Lieutenant Mente

A system has been worked out whereby everything a soldier does is plotted on a graph and compared to a standard. It particularly applies to recruits and makes it easy to determine for what particular branch of work they are best suited. However, as the author points out, the system can be used in many ways in the army and even in industry. The advantage of such a system is that it provides a standard to which a man can be readily and easily compared with a view either to eliminating him or placing him on the job best suited to him. It eliminates guessing and saves time.

March 1935

(10) PAGES D'HISTOIRE DE L'ARMÉE BELGE AU COURS DE LA GUERRE 1914-1918.—COMPAGNIE SPÉCIALE DE DESTRUCTION. [History of the Belgian Army in the World War. Operations of a special demolition company.]

(II) Colonel Delfosse

(11) PAGES D'HISTOIRE DE L'ARMÉE BELGE AU COURS DE LA GUERRE 1914-1918.—AU BOYAU DE LA MORT, LE 6 SEPTEMBRE 1915. [History of the Belgian Army in the World War. In the clutches of death, 6 September, 1915.] Major Beaupain

(12) LES CHEMINS DE FER ALLEMANDS EN 1914. [The German railroads in 1914.] (II) Captain Bedoret

The first chapter of this article appeared in the February issue of the "Bulletin Belge des Sciences Militaires," in which the preparation of the railroads for mobilization was discussed. This chapter deals with the results of the preparation. The author concludes that the efficient functioning of railroads in time of war depends on the amount of minute preparation in time of peace and on collaboration between civil and military authorities in regard to peace time and war time needs. It is believed that a system of railroads can be worked out in Germany which will meet both the peace and war time requirements.

(13) DÉFENSE D'ARRÊT. TIRS DE CONCENTRATION EXÉCUTÉS PAR LES MI. DANS LA ZONE DES AVANT-POSTES. [Defensive judgment. Concentrated fire of machine guns in the zone of the advance posts.] Lieut. General Grade

A study of the effectiveness of long range machine-gun fire. Due to the dispersion, lack of grazing effect, and the enormous amount of ammunition necessary to produce any results, it is concluded that machine-gun fire beyond 2000 yards is generally not feasible.

(14) OBSERVATION D'ARTILLERIE. CONTRIBUTION À L'ÉTUDE DE SON ORGANISATION. [Observation of artillery. A contribution to the study of its organization.] Captain Smesman

A discussion of the merits of some new changes in the regulations on the organization of observation in the artillery.

(15) LES PROCÉDÉS DE COMBAT DE L'INFANTERIE ALLEMANDE. [The combat principles of the German infantry.] (III) Major Wanty

In this, the last chapter of this article, an attempt is made to give the reader a fairly complete picture of the simple combat principles of the German infantry. This chapter deals with the company in the occupation and defense of a position, advance posts, the combat group in the attack, and the combat group in the defense.

(16) RAPPORT GÉNÉRAL SUR LA MANŒUVRE DE DÉFENSE PASSIVE DU GRAND-BRUXELLES. [General information on the passive defense of greater Brussels.] Lieut. General Cattoir

General Cattoir discusses the recent night air attack on Brussels and a few of the lessons learned from it. The government had appropriated no money for warning signals, and it was found that the factory sirens throughout the city were inadequate. It was also found that the city lights, although dimmed to a dull blue, were still visible from the air; that there were not enough first aid stations for the treatment of gas victims, and that the litter bearers and other hospital workers had difficulty in working while wearing gas masks. Steps are being taken to correct these weaknesses and to make the city less vulnerable to an attack from the air.

(17) UNE LEVÉE DE CANDIDATES SOUS-LIEUTENANTS EN 1813. LES GARDES D'HONNEUR. [A levying of sub-lieutenant candidates in 1813. The Guards of Honor.] Major Couvreur

An account of the Guards of Honor levied in 1813 by command of the Emperor Napoleon. The guards were composed of young men, well educated, and from the best families. They first came under fire at Leipzig, more or less by accident since the Emperor had intended to use them only as a display of strength and to allow them to witness a battle. Thereafter they saw action many times and, although lacking in experience and training, maintained a high state of morale.

CANADIAN DEFENCE QUARTERLY (Canada)

July 1935

- (1) THE BURTHEN AND THE BRUNT. A SHORT DESCRIPTION OF THE SERVICE OF THE BRITISH REGULAR ARMY IN CANADA. Colonel Pearkes
- (2) THE SIGNIFICANCE OF VIMY. Colonel Duguid
- (3) THE CONQUEST OF THE ZONE OF THE CHINESE EASTERN RAILWAY. Colonel Nikolaieff
- (4) PROGRESS IN FIELD ENGINEERING
- (5) THE CRYING OF HAVOC AMONG THE SCHOOL CHILDREN. Kerr
- (6) THE REPAIR, RECOVERY AND REPLENISHMENT OF MECHANICAL VEHICLES IN THE FIELD
- (7) DISARMAMENT AND THE NAVAL CONFERENCE AT LONDON, 1935. Okell
- (8) THE ROYAL CANADIAN AIR FORCE. Flight Lieutenant Walker
- (9) THE W/T SET No. 1 WITH ARTILLERY. Major Lee

CAVALRY JOURNAL

May-June 1935

- (1) GENERAL J.E.B. STUART AT BRANDY STATION. Colonel Beck
- (2) INFLUENCES OF MECHANIZATION, MOTORIZATION AND MACHINE GUNS ON THE HORSE CAVALRY REGIMENT'S TACTICS, ORGANIZATION AND SUPPLY METHODS. Colonel Martin
- (3) ADVANCE GUARD OR COVERING DETACHMENT. (IV) Brigadier General Hawkins
- (4) THE 305TH CAVALRY COMMAND POST EXERCISE. Captain Taylor
- (5) DEMONSTRATION OF SCOUT CARS AT THE FIELD ARTILLERY SCHOOL. Captain Heavy
- (6) A LIGHT CROSS-COUNTRY CAR. Lieutenant Hamilton
- (7) THE INTELLIGENT 27. Rodman
- (8) THE PHILLIPS CROSS-COUNTRY SADDLE. Colonel Phillips

(9) MODERN CAVALRY: DIVISION CAVALRY. Lieutenant General Brandt, German Army

(10) A METHOD OF GOING INTO ACTION WITH THE CAVALRY HEAVY MACHINE GUN. Lieutenant Sells

CAVALRY JOURNAL (Great Britain)

April 1935

(1) THE CAVALRY IN FRANCE: AUGUST-NOVEMBER, 1918. (V) Lieutenant-Colonel Preston

(2) POLO PONY BREEDING. Lieutenant-Colonel Goldschmidt

(3) THE INDIAN CAVALRY OF TO-DAY. Major-General Giles

(4) NEW SOUTH WALES CAVALRY. Captain Richardson

(5) GENERAL MAMONTOW'S CAVALRY RAID. Brevet-Captain Hinterhoff, Polish Army

(6) THE 10TH AUSTRALIAN LIGHT HORSE ATTACK AT MAGDHABA, 23RD DECEMBER, 1916. Major Robertson

(7) MODERN CAVALRY HEAD-DRESSES. PART IV, HUSSARS. Lieutenant-Colonel Ryan

(8) AEROPLANES VERSUS CAVALRY. Major Persse

(9) OPERATIONS AGAINST THE NUBA GEBELS (OCTOBER 17, 1917 TO JANUARY 25, 1918): BEING EXTRACTS FROM THE DIARIES OF MAJOR A.J.R. LAMB, D.S.O., THE QUEEN'S BAYS

July 1935

(10) CAVALRY IN FRANCE: AUGUST-NOVEMBER, 1918. (VI) Lieutenant-Colonel Preston

(11) REFLECTIONS ON THE USE OF MODERN CAVALRY. Lieutenant-Colonel Baker

(12) THE YOEMANRY AT RAFA, 9TH JANUARY, 1917. Major Teichman

(13) TWO CAVALRY RAIDS OF THE GREAT WAR. (I) Captain Sheppard

(14) OPERATIONS AGAINST THE NUBA GEBELS (OCTOBER 17TH, 1917 TO JANUARY 25TH, 1918). (II) Major Lamb

CHEMICAL WARFARE BULLETIN

April 1935

(1) CHEMICAL WARFARE FACES THE FUTURE. Major General Brigham

(2) THE FLYING FIGS. Lieut. Colonel Witten

(3) NOMENCLATURE OF CHEMICAL AMMUNITION

(4) SMOKE, GAS, AND HUNTING SCENT. Brigadier Farfan

(5) SURFACE SETUP ASSEMBLY FOR THE CHEMICAL MORTAR. Powell

(6) JAPANESE MOBILIZATION OF CHEMICAL INDUSTRY

(7) CHEMICAL TRAINING IN THE RED ARMY (RUSSIAN)

(8) GAS WAVE ATTACK. Mercier

COAST ARTILLERY JOURNAL

May-June 1935

(1) THE WAR IN THE CHACO. Lieutenant Farnsworth

(2) RADIO ENERGY RADIATION AND PROPAGATION. Major Colton

(3) THE INTELLIGENT 27. Rodman

(4) NAVAL PARITY. Colonel Vestal

(5) SOME IDEAS ON EFFICIENCY REPORTS. Lieut. Colonel Lemly

(6) SPERRY. Lieutenant Engelhart

(7) SERVICE SCHOOLS—A RADICAL SUGGESTION. Lieutenant Gill

(8) RAPID ORIENTATION FOR MOBILE BATTERIES. Lieutenant Thompson

(9) NOTES ON ANTI-AIRCRAFT MACHINE-GUN FIRE CONTROL. Colonel Sunderland

(10) CHEMICAL WARFARE TRAINING AND MORALE. Lieutenant Bertolet

(11) THE MILITARY MISSION TO BRAZIL

July-August 1935

- (12) COMMAND OF LAND AND AIR FORCES IN COAST ARTILLERY. Lieut. Colonel Smith
- (13) MINUTE MEN OF THE NEXT WAR. Major General Hagood
- (14) EFFICIENCY REWARD IN THE ARMY. By "Rewarded"
- (15) DEFENDING OUR LAST FRONTIER. Gordon
- (16) PRESS CENSORSHIP IN WAR TIME. Part I. Captain Caygill
- (17) CHEMICAL SECURITY. Part I. Captain Waitt
- (18) MARCH OF THE SIXTY-NINTH. Major McCatty
- (19) THE CHEMICAL WARFARE SCHOOL. Captain Fisher
- (20) DATA TRANSMISSION AND REMOTE-CONTROL SIGHT SYSTEM FOR ANTI-AIRCRAFT MACHINE GUNS. Lieutenant Denson
- (21) IMPROVED SYSTEM FOR A.A. RECORDS SECTIONS. Lieutenants Berry and Sawyer
- (22) LET'S HAVE BETTER RESERVE OFFICERS. Lieutenant Warren
- (23) TACTICAL EMPLOYMENT OF SEARCHLIGHTS. Captain Marquat
- (24) TRAINING PANEL FOR ANTI-AIRCRAFT SPOTTING. Lieutenant Ramon

FIELD ARTILLERY JOURNAL

May-June 1935

- (1) ORGANIZATION, ARMAMENT, AMMUNITION AND AMMUNITION EXPENDITURE OF THE GERMAN FIELD ARTILLERY DURING THE WORLD WAR. Lieut. General Muther, German Army, Retired. Translation by Captain Shutter
- (2) ROVING GUNS. Lieut. Colonel de Mazenod, French Army. Translation by Lieutenant Grayeb
- (3) ARTILLERY SMOKE SCREEN. Captain McBride
- (4) REQUIREMENTS OF AN ADVANCE GUARD FOR SUPPORT BY ITS ARTILLERY. Colonel Roques, French Army
- (5) VERY LONG RANGE FIRE (OVER 20,000 METERS) IN THE MEUSE-ARGONNE CAMPAIGN. Colonel Lanza
- (6) A NOVEL SMOKE BOMB RANGE. Lieutenant Pearsall
- (7) A RIOT FORMATION. Lieut. Colonel Collins
- (8) CHANGING THE PICTURE OF COMMAND AND STAFF FUNCTIONS. Colonel Whitney

FIGHTING FORCES (Great Britain)

June 1935

- (1) THE AIR FRANKENSTEIN. By the Editor
- (2) THE TRIDENT IN THE WAR. II.—THE MERCANTILE MARINE. Commander Evans
- (3) MORE ABOUT THE MARCH RETREAT
- (4) AUTOGIROS AND THE FUTURE. By our Air correspondent
- (5) AN ECHO FROM THE MARNE. Communicated by A.H.B.

INFANTRY JOURNAL

May-June 1935

- (1) THE WAR IN THE CHACO. Lieutenant Farnsworth
- (2) "WHERE ANGELS FEAR TO TREAD." Lieutenant Lanham
- (3) NAVAL PARITY. Colonel Vestal
- (4) NOT IN THE REGULATIONS. Captain Parker
- (5) UP FROM THE PRIMITIVE. Captain Lovett
- (6) THE HAND THAT ENDED THE CIVIL WAR. Captain Yeuell
- (7) THE INTELLIGENT 27. Rodman
- (8) SOME IDEAS ON EFFICIENCY REPORTS. Lieut. Colonel Lemly
- (9) ARTILLERY SUPPORT IN ATTACK. Captain Case

- (10) THE MARCH OF TIME. Brigadier General Herron
- (11) VARIATIONS OF DEFENSIVE FIRES. Major Schwien
- (12) WARFARE IN THE 18TH CENTURY. Part II. Lieut. Colonel Scammell

- (13) CONTACT IS IMMINENT! Major Arms
- (14) REUNION ON THE STYX. Part III. By Signifer

July-August 1935

- (15) THE STORY OF OLD FORT DEARBORN. Colonel Edwards
- (16) CHEMICAL SECURITY: Part I. Captain Waitt
- (17) AMATEUR OR PROFESSIONAL? Captain Greene
- (18) MORE WEIGHT IN THE HAMMER. Colonel Greer
- (19) PORTRAIT OF A SOLDIER
- (20) DEFENDING OUR LAST FRONTIER. Gordon
- (21) LET'S HAVE BETTER RESERVE OFFICERS. Lieutenant Warren
- (22) DEVELOPMENT OF TANK TACTICS, 1937-1939. Major Boltz
- (23) INFANTRY AWAKENING. Captain Yeuell
- (24) MINUTE MEN OF THE NEXT WAR. Major General Hagood
- (25) ANIMADVERSIONS ANENT ANFRAC TUOSE AND OBFUSCATORY LOCUTIONS. Captain Skinner
- (26) BRICKS WITHOUT STRAW. Major Schaufler
- (27) PRESS CENSORSHIP IN WAR TIME. Part I. Captain Caygill
- (28) EFFICIENCY REWARD IN THE ARMY. By "Rewarded"
- (29) THE SYNTHETIC MACHINE GUN. Colonel Kelley

JOURNAL OF THE ROYAL ARTILLERY (Great Britain)

July 1935

- (1) "ARE THE WEIGHTS OF SHELL OF THE VARIOUS CATEGORIES OF FIELD ARMY ARTILLERY THE MOST SUITABLE, HAVING REGARD TO THE VARIOUS RÔLES WHICH THE LATTER MAY HAVE TO UNDERTAKE AND THE VARIED THEATRES OF WAR IN WHICH THEY MAY HAVE TO ACT?" Major Hilton ("Duncan" Silver Medal Essay, 1934-35)
- (2) PREDICTED FIRE AND THE USE OF THE 1/25000 GRIDDED MAP. Major MacLeod
- (3) THE PROBLEM OF LONG RANGE COAST DEFENCE GUNNERY. Major Trappes-Lomax
- (4) DISCUSS THE ORGANIZATION AND TRAINING OF THE TERRITORIAL ARMY TO PRODUCE THE BEST RESULTS IN COAST DEFENCE ON THE ASSUMPTION THAT REGULAR ASSISTANCE IS REDUCED TO A MINIMUM. Captain Murley
- (5) "UBIQUE." Major Waller

**JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION
(Great Britain)**

May 1935

- (1) TO CONSIDER IN ALL ITS ASPECTS THE MINIMUM SIZE OF THE CAPITAL SHIP DEMANDED BY MODERN CONDITIONS OF WARFARE. [Gold Medal essay (Naval), 1934] Lieutenant Bennett
- (2) EMPIRE OIL SUPPLIES IN WAR. Rear Admiral Blake
- (3) SEDGEMOOR—1685. THE BIRTH OF SOME FAMOUS REGIMENTS. Major Edwards
- (4) THE TERRITORIAL ARMY. Lieut.-Colonel Dunlop
- (5) SOME ASPECTS OF AIR OPERATIONS AT SEA. Commander Ellis
- (6) SEADROMES. Williams
- (7) THE MILITARY POSSIBILITIES OF THE AUTOGIRO. Major Holland
- (8) STRATEGIC MOVEMENT BY RAIL IN 1914. PART II.—STRATEGIC MOVEMENT DURING OPERATIONS. Major Napier
- (9) IRAQ. Major-General Rowan-Robinson
- (10) ITALIAN AVIATION. Flying Officer Dunworth
- (11) THE INTERNATIONAL SITUATION

MARINE CORPS GAZETTE

May 1935

- (1) THE OLD BEAR OF THE NORTH. Lieut. Commander Birkett
- (2) "BLOCKING THE BELGIAN BASES." De Weerd
- (3) THE RESERVISTS AND THE NEXT WAR. Captain O'Connell
- (4) YUKON VS. MAUNA LOA
- (5) DIPLOMATIC SPURS. OUR EXPERIENCES IN SANTO DOMINGO. (II)
Lieut. Colonel Miller
- (6) FIRST LINE DEFENSE. Lieut. Colonel del Valle
- (7) WHAT PRICE PISTOL? Lieutenant Johnson

MILITARWISSENSCHAFTLICHE MITTEILUNGEN (Austria)

By Major F. During, Infantry

January 1935

- (1) DAS FORT HENSEL IM WELTKRIEGE. [Fort Hensel in the late war.]
Colonel v.Arno

In all Austria's wars concerning its southwestern frontier the space between Tarvis and Villach, difficult of access, difficult to traverse, and poor in roads, lying between the Carnic and the Julian Alps, has played an important role. This space lies on the shortest route from upper Italy into the heart of Austria, to Vienna: it is here that the roads up the Tagliamento and the Isonzo meet the military roads, from Tarvis down the Save into Carniola and Croatia, and along the Drave from the Tyrol through Villach to Styria and Hungary.

In 1808, after war had on several occasions suggested the desirability of fortifications being built, work was started on two forts, one at Malborghet, west of Tarvis, and the other guarding the Predil pass, south of that place. They were soon put to the test, and in May, 1809, Fort Malborghet under Captain Hensel and Fort Predil under Captain v.Hermann each held up the advance of a French column for four days, the defenders earning undying fame for their self-sacrifice; in fact, the Austrian Thermopylae!

After Austria's southwest frontier had been pushed back in 1866, owing to the loss of the province of Venetia, the former importance of the Tarvis-Villach area revived, and in the eighties the barrier-forts were brought up to date. The names of the two engineer officers, the heroes of 1809, were perpetuated in the new forts, Fort Malborghet being renamed Fort Hensel. The latter consisted of two parts, 140 yards apart, with underground communication, bomb-proof shelters, armored turrets, masonry escarp, rock counterscarp, a high wall for the gorge, and the whole wired in. Its armament was originally two 10-cm. howitzers, four 9-cm. guns for flanking, and eight 12-cm. guns; but most of the guns were removed in the spring of 1915 to fresh positions outside, since it was realized that an old, at best only adapted, fort would be unable to stand up to modern siege artillery.

When Italy declared war on 23 May, 1915, the position of Fort Hensel about 2½ miles behind the front line must have been a source of anxiety to the Austrians. It was part of the original Italian plan for their Carnian Corps to capture Tarvis, so as to cover the left flank of the Second and Third Armies, striking due east, but the corps commander preferred to remain on the frontier to butting against the barrier-forts. Instead, the Italians seized the heights required for their outposts and brought up their heavy guns. Fort Hensel had thus achieved a purpose. On 20 June a systematic bombardment of the fort started which lasted 48 days. During that time eight mortars and howitzers of calibers from 15 to 30.5-cm. fired 300 tons of ammunition at the fort, hitting it at least 1,200 times. At the end of that time the fort had still in action two howitzers and one gun, or three-quarters of its total armament. Ten months later, on 19 March, 1916, the fort was abandoned as only a heap of ruins, the commander being one of the last people killed.

It is one of the astonishing stories of war that this fort held out so long, hopelessly outranged and against overwhelming odds, its garrison patching up by night as well as they were able the damage done each day. The Archduke Eugène said that what had happened was a proof that the strongest defense is not armor-plate and masonry, but the spirit of man.

(2) FRAGEN DER ARTILLERIEVERWENDUNG. [Questions on the use of artillery.] General v.Eimannsberger (See abstract, page 72.)

(3) DIE ABSCHLUSZÜBUNGEN DER ITALIENISCHEN LUFTARMEE IM OKTOBER 1934. [The final maneuvers of the Italian Air Forces, October, 1934.] Major General Schäfer

Italy carried out last year short, but instructive, naval maneuvers off Gaeta, army maneuvers on a large scale in the Tuscan Apennines, and finally an air force exercise. The latter was intended to show the capabilities of the Italian airmen, their latest machines, and especially to test the bombers. For the latter purpose near Furbara, on the coast, about 25 miles west of Rome, a "harbor" was laid out in outline on the ground, including the outline of a large ship, while on "shore" were indicated a railway terminus, a factory, and the hangars, etc., of an airdrome. Attacking or defending, 160 planes took part in the exercise, and the enemy bombers whose base was at Orbetello, about 50 miles away, dropped 1,000 bombs (totalling a weight of 25 tons) in 20 minutes. Photographic films taken during the bombardment were dropped by parachute, and the prints were shown in 40 minutes.

(4) WEHRPOLITISCHE ÜBERSICHT. ABGESCHLOSSEN MIT 15. DEZEMBER 1934. [International military politics.] (I) Major General Paschek

Major General Paschek makes his annual review of events affecting international relations. In his preliminary remarks he points out that the seriousness of the military situation in the Far East and in Europe can be traced to similar deep-lying causes. In each case a great nation is struggling for the conditions upon which its continuance is possible; Japan, for room to settle her surplus population and for an economic sphere of influence; and Germany for the right to arm like other nations. At present Germany can get no allies, as it has nothing to offer them. Germany's right to re-arm, after a restriction lasting more than half a generation, can no longer be denied her. It will in any case lose in value owing to the increase of armaments "knowing no barriers" of the nations around her. Thus we have hard times ahead!

The author then carries out his review under the following headings, a distribution which is in itself instructive, apart from the elucidatory notes under each heading and against each nation mentioned:

Grouping of the European Powers:

A. The struggle for the New Europe:

1. The French sphere of influence:

(a) The Western Group: France, Belgium, Spain, Portugal.

(b) The Little Entente: Czechoslovakia, Yugoslavia, Rumania.

(c) Russia.

2. Italy, intermediate between 1 and 3.

3. Disarmed Central Europe: Germany, Austria, Hungary.

4. The protection of Eastern Europe against Bolshevism: Poland, the Baltic States.

5. S.E. Europe: The Balkans, and the Near East.

B. The Neutrals: Switzerland, Scandinavia, Denmark, Holland.

A table of armaments of forty different countries gives statistics relating to armaments under thirty separate headings.

February 1935

(5) DER RUSSICH-POLNISCHE KRIEG 1919-1920. UNKRITISCHE UND KRITISCHE BETRACHTUNGEN. [The Russo-Polish War, 1919-1920. Non-critical and critical views.] (III) Colonel v. Wittich (See abstract, page 39.)

(6) GELÄNDEGÄNGIGE KRAFTFAHRZEUGE IM HEERESDIENST. [Cross-country vehicles in military service.] Major Schmilauer

(7) WEHRPOLITISCHE ÜBERSICHT. ABGESCHLOSSEN MIT 15. DEZEMBER 1934. [International military politics.] (II) Major General Paschek

Part II of these notes deals with "Outside Europe" and with general questions, the League of Nations, armament v. disarmament, naval limitations, armament industry, capitalism, army organization, economic preparation for war, the advance of weapon techniques, world economics, and world communication.

General Paschek here puts some questions to his readers to study: (a) In what countries does their distressed economic condition indicate a danger of war? (b) To what extent does international capitalism gain by war, and influence it? (c) To what extent can the intervention of the state do away with the canker of unemployment?

Outside Europe is dealt with under the headings: The British Empire, the United States, Latin America, and the Far East.

(8) VOR DER ENTSCHIEDUNG IM OSTEN. [Before the decision in the East.] Major General Kerchnawe

Under this title Major General Kerchnawe deals with the Austro-German campaign against Rumania, and the last offensive of the Russian Imperial army.

March 1935

(9) DIE OFFIZIERSHERANBILDUNG IN ÖSTERREICH. [The early training of officers in Austria.] Major General Kainz

(10) TAKTIKAUFGABE 1 (APPLIKATORISCHE BESPRECHUNG). [Tactical Problem No. 1.] Colonel Zellner

The first of a series of problems dealing generally with a reinforced brigade in defense.

(11) DER INFANTERIEMESZDIENST. [Infantry field survey.] Lieutenant Fussenegger

(12) DIE AMERIKANISCHE 75 MM-GEBIRGSHAUBITZE M. 1. [The American 75-mm. mountain gun.] Major General Rieder

MILITAR-WOCHENBLATT (Germany)

By Major G.J. Braun, Infantry

11 March 1935

(1) AUS GROSZER ZEIT VOR ZWANZIG JAHREN. VERWENDUNG VON NACHRICHTENMITTELEN IM ERSTEN KRIEGSJAHR UND LEHREN DARAUS FÜR HEUTE. [Twenty years ago. Communication experiences on the Western Front.] (I) Colonel Fellgiebel

It is common knowledge that the means of communication on the Western Front failed at the outset of the war up to and including the battle of the Marne. According to the author this was due to (a) insufficient communication equipment, (b) an erroneous system of installation, (c) inexperience of commanders in knowledge and installation of the means of their communication.

The responsibility for establishment of communications was not definitely stated in orders. It was erroneous to have it established from front to rear. In most cases the different army headquarters endeavored to command from a distance of 80 to 375 miles. Due to the great distance and unnecessary staff requirements, the limited wire proved insufficient to meet the demands, causing a breakdown in communications.

With proper supervision and utilization of available equipment, communications could have been established between corps and down to all

combatant divisions. This would have required the cooperation of the army and corps telephone units which could have been daily regulated by the army commander in army orders, making the corps commander responsible for the establishment of communications within their respective corps. Only in this manner could the communication demands be met.

(2) ÜBERRASCHUNGEN IN DER WINTERLICHEN KRIEGFÜHRUNG. [Surprises in winter combat leading.] Captain Ponath

In this article the author reminds military leaders that seasonal and regional weather conditions are not constant, and that the most unexpected weather changes may create sudden embarrassing tactical situations. In order to prove his point he cites several historical examples.

In February, 1915, during the winter offensive of the Mazurian Lake area, the German XX Army Corps had the mission to protect the south flank by an advance on Lomza. The hard road from Johannesburg to Lomza was available for this. The troops moved easily over this frozen road covered with deep snow. As soon as the East Prussian border was crossed, thaw and rain started. The enemy had destroyed the bridges over the Vincenta River, but the infantry and cavalry patrols of the German 41st Division quickly dispersed weak hostile forces on the far bank. This was the limit of all movement due to the mud and slush. Only the infantry and cavalry possessed any mobility; the artillery and the supply trains could not move. The enemy realized this situation and surprised the outposts of the 41st Division north of Kolno at dawn. The movement on Kolno and Lomza did not start until frost had set in again.

Similarly at the end of January, 1917, the German Ninth Army, after months of successful open warfare, penetrated deep into Rumania, and succeeded in breaking down the last Russian defensive position before reverting to position warfare in the Sereth Sector. During the mild weather the 41st Division managed to capture the last bridgehead at Nanesti. A sudden drop in temperature, with unheard of ice and snow storms, made all troop movements impossible, even the pursuit of the enemy by artillery fire. A zero winter set in and in less than a week, General Falkenhayn reported he had one-fourth as many casualties from freezing as he had lost in combat during the four months of previous campaigning.

As soon as reversion to position warfare occurred, troops became available for the west front. It required considerable time and energy for the 41st Division to move with its trains over the poorly marked roads and snow covered terrain, of shell holes and trenches of old battlefields. One regiment remained immobile for a week, as it required all their efforts to clear the snow from the entraining railhead at Cilibia.

Motorized transport could not have been of assistance here. These historical examples may be repeated in any future war. Weather conditions can alter a campaign or tie up sorely needed reserves.

(3) HEERESKAVALLERIE UND MOTORISIERTER VERBÄNDE. [Army cavalry and motorized units.]

The author states that General v. Poseck, in his essay on "Army Experiences in the Use of Modern Cavalry," brings up the question of the cooperation between cavalry and motorized units, and that he approves motorization, especially mechanized units, in the war of the future. The supporters of the development of a modern mechanized organization will appreciate the strong endorsement of this idea by so capable a soldier as General v. Poseck. His stimulation is not wasted, because a number of fundamentals have been derived from the cavalry experiences of the World War, 1914-18. These pertain not only to cavalry and mechanized cavalry, but also for mobile and speedy weapons.

Considering the factor of speed, the following are average rates:

	PER HOUR	PER DAY
Infantry division.....	2.5 miles	15.5-25 miles
Cavalry division.....	4.3-8 miles	25-37 miles
Mechanized units (armored cars).....	12.5 miles	93-124 miles
Motorized infantry units.....	18.5 miles	155-186 miles

The rate per hour for cavalry is almost twice that of the infantry and its daily accomplishment is about a third as much. Principally from these rates of speed and accomplishments will come the proper demand on the cavalry in the cooperation of large cavalry units (cavalry divisions and cavalry corps). According to the author these are to be used in large masses in the decisive direction in battle, and they are to be released from infantry divisions, corps, and armies and placed under control of general headquarters.

The rates per hour of mechanized units and their daily accomplishments are about three times that of horse cavalry; infantry units that are motorized can accomplish still more. For the cavalry the doubling of the rate per hour and increase of $1/3$ of the day's efficiency is sufficient compared with the infantry, to permit a consolidation of a large cavalry unit and the formulation of independent missions. The fact that the mechanized units are three times as fast as the cavalry should favor this move. It is not erroneous to state that the uniting of faster and slower units will kill the speed of the faster units, and will make more difficult the exploiting of excellent opportunities and surprising an enemy. This combining with slower units nullifies the best weapon features of the faster vehicle. This statement refers to the cavalry with its speed when coupled with infantry, likewise the mechanized force with cavalry.

An army entering in a war without mechanized units or aircraft will find itself in a hopeless situation, overwhelmed by a highly armed opponent, as was the case of the German Army at Soissons and Amiens. Without these weapons it is almost impossible to defend oneself these days. These two new weapons are far more decisive than the cavalry was in 1914. The effectiveness of all weapons, especially the air service and the mechanized forces, have naturally undergone many changes and in the meantime the defensive measures have changed correspondingly. The skill in leadership rests in the ability to utilize to the utmost degree the peculiarities of that weapon. Here the author comes to the same conclusions arrived at by General v.Poseck, relative to the cavalry, namely, demanding their consolidation in one branch of service under single leadership during peacetime for training.

Following these observations and fundamental statements it is necessary to note certain details.

General v.Poseck states that it requires more time to train cavalry than motorized units. This statement is not accepted as a fact because foreign armies, for example, England, require five-year enlistments and men of high specialist ratings for their mechanized units. Still the author, who recently returned from foreign duty, feels that the general specialist training of mechanized and motorized forces abroad requires too much time and that foreign armies consider the horse only as a means of transportation.

General v.Poseck feared that in operations with a reversed front or in rear of an opponent, the "lack of fuel would soon paralyze the machine." It is certain that the supply situation of motorized units has a great influence on formulating tactical decisions. An honest test of these phases must be given during peace-time maneuvers. But this supply situation does not afford a fundamental difference between cavalry and motorized equipment, because General v.Poseck states that the lack of oats supply was the cause of great fatigue of men and horses with Marwitz' and Richthofen's Cavalry Corps. The same occurred to the French Cavalry Corps of Sordet and Conneau.

The author is of the opinion that motorized reconnaissance by night is not practical. It is hard to agree with this blunt statement. Darkness creates certain limitations to all arms and branches in night reconnaissance. Fundamentally the principle that once contact is made with an enemy, it should never be lost, still holds. Roads and paths must be watched. All these functions can either be well or poorly performed by ground troops. The air service is only charged with the supervising and interception mission.

General v. Poseck states that cavalry possesses greater mobility in difficult terrain than any other combat branch. This is not concurred in, as the cavalry rates second to infantry, which is considered the terrain covering branch. The infantry had the advantage as it can go wherever a healthy man can go, including woods and mountains. Truly the terrain mobility of the horse compared to tractor vehicles has swung in favor of the motor in recent years. The development of the tractor motivated vehicles in this respect has just started; it is necessary to wait to see its progress.

The conception that cavalry can evade artillery and air service activities easier than motorized vehicle columns is true, because of the necessity of supply columns being tied down to roads. At present mechanized troops and tank troops are not as vulnerable as cavalry to artillery and air activities. It is the only ground weapon that is not vulnerable to gas.

In conclusion it can be said that the mechanized force has become a new principal weapon in all well-equipped armies and does not belong to the army cavalry. It follows the old proverb, not to pour new wine in old containers. But this should not prevent the coordination with all other weapons, if the combat purpose dictates this move.

(4) FLUGZEUGSCHIFFE. [Aircraft carriers.] Lieut. Colonel Feuchter, Retired

When referring to aircraft carriers of a fleet, reference is made to a special ship, not the average warship which is equipped with deck aircraft. These deck aircraft are hydroplanes whose missions are reconnaissance for their particular ship. Their take-off is either from catapult or by crane to the water and the return to the ship by crane. Considerable advancement can be made in the installation of catapults on warships due to the necessity of re-locating ships' guns so as not to interfere with the aircraft in take-off, and vice versa, that the aircraft does not blind the firing. The United States has catapults on all ships of the line and cruisers and three or four deck aircraft. The ships of the navies of England, France, Italy, and Japan are all post war cruisers with catapults and deck aircraft except that Japan also has similar equipment on its dreadnaughts. All of Italy's large ships of the line and a few of the large English ships of the line and older cruisers are likewise equipped.

The various ships carrying aircraft, also the special ships, are called the aircraft carriers, cruisers with aircraft decks, aircraft mother ships, and aircraft cruisers. Not only in the daily papers but also in the military periodicals, we find little differentiation between the characteristics of aircraft-carrying ships. The terms at times are interchangeably used and erroneously used. The following definitions are to clarify these classes of ships:

(Flugzeugträger).—Aircraft carriers are ships equipped with landing decks that cover the entire length of the ship. These are equipped with space for the take-off and landing of wheeled landing gear land planes. These ships either have no superstructure above the flying deck, or if such exists it is located on the extreme port side to afford as much free deck as possible. These aircraft carriers are well equipped with antiaircraft weapons and remarkable armament. Take-off and landings are made while the ship is moving.

(Flugzeugkreuzer).—Aircraft cruiser is a ship converted into an aircraft carrier possessing a flying deck the same as an aircraft carrier upon which land aircraft can take off and land. This ship is still under discussion and at present is a project of the United States and Japan. Take-off and landings are made while the ship is moving.

(Flugzeugmutterschiffen).—Aircraft mother ships, or seaplane carriers, are defined as bases for pontoon or flying boat aircraft. Their aircraft is lowered by crane to the water for the take-off and hoisted to deck by crane after flight to be stowed away. This performance must take place while the ship is not moving. The majority of mother ships also are equipped with a catapult for small aircraft. Included in the mother ship

class are the aircraft transports and aircraft tenders. The first type, as the name indicates, transports planes to a distant coast. The tenders are a floating refueling base and repair shop and go to the assistance of aircraft on the sea due to forced landings.

(Flugzeugkreuzer).—Aircraft cruisers are normal cruisers that carry as an additional armament numerous seaplanes. The aircraft are catapulted from the moving ship. If the ship is not in motion the plane can be lowered by crane for a water take-off.

Fleets possessing aircraft carrying ships:

AIRCRAFT CARRIERS

England.—"Argus," 14,450 tons, 20 knots, carrying 15-20 planes; "Hermes," 10,850 tons, 25 knots, carrying 15-25 planes; "Eagle," 22,600 tons, 24 knots, carrying 21-40 planes; "Furious," 22,450 tons, 32.5 knots, carrying 36-60 planes; "Courageous," 22,500 tons, 31.5 knots, carrying 52-60 planes; "Glorious," 22,700 tons, 31.5 knots, carrying 52-60 planes.

France.—"Béarn," 11,500 tons, 15 knots, carrying 34 planes.

United States.—"Saratoga," 33,000 tons, 34.7 knots, carrying 135 planes (45 of which are dismantled); "Lexington," 33,000 tons, 34.7 knots, carrying 135 planes (45 of which are dismantled); "Ranger," 13,800 tons, 29.5 knots, carrying 72 planes.

Japan.—"Hosho," 7,470 tons, 25 knots, carrying 26 planes; "Akagi," 26,900 tons, 23.5 knots, carrying 50 planes; "Kaga," 26,900 tons, 25 knots, carrying 60 planes; "Ryujo," 7,600 tons, 25 knots, carrying 50 planes.

AIRCRAFT MOTHER SHIPS (SEAPLANE CARRIERS)

England.—"Albatross," 4,800 tons, 20 knots, carrying 9 hydroplanes.

France.—"Commandant Teste," 10,000 tons, 20.5 knots, carrying 26 planes.

Italian.—"Guiseppe Miraglia," 4,890 tons, 21.5 knots, carrying 20 planes.

United States.—"Wright," 9,500 tons, 15 knots, carrying 8 planes (aircraft tender).

Japan.—"Kamoi," 17,000 tons, 15 knots; "Notoro," 14,000 tons, 15 knots.

Spain.—"Dedale," 11,300 tons, 11 knots, carrying 1 airship, 2 captive observation balloons, 25 planes (aircraft transport).

AIRCRAFT CRUISERS

Sweden.—"Gotland," 4,525 tons, 27.5 knots, carrying 8 planes.

Of all the aircraft carrying ships mentioned, the aircraft carrier is of greatest interest, it being the focus of discussion as to its combat value. A fair following of naval authorities favor this craft because of its ability to provide a greater number of aircraft in the operations of a fleet and coastal bombing missions of hostile territory. The opponents of this class of ship oppose it because of its vulnerability. This argument bears great weight as "all the eggs are carried in one basket" and the loss of one of these ships would rob a fleet of its aircraft strength. This is best demonstrated in the American ships. The "Ranger," 13,800 tons, carries 72 planes; whereas the "Lexington" and "Saratoga," 33,000 tons, carry 135 planes each. The new American ships under construction ("Yorktown" and "Enterprise") will be of the "Ranger" class.

Japan in the ineffectual London Naval Conference demanded the elimination of aircraft carriers. This is an important question to Japan because, due to its location it has not been threatened by any air attack from land. The flying radius of aircraft has not yet been developed to enable bombers to come from Russia to Japan and return. The situation for Japan would change if an opponent could reach a point about 70 miles off shore with a large fleet of bombers.

Not only are the naval authorities concerned in the development of aircraft carriers but also the military. These specially designed ships with their cargo of planes can greatly influence the success of landing operations.

(5) NEUZEITLICHE KAMPFWAGENABWEHR AUF DEM GEFECHTSFELD.
[Modern antitank defense.]

The author takes an exception to the principles expressed in an article by the same title in "Militär-Wochenblatt" for 11 February, 1935, by v.Losow (see RML No. 57, page 103), which was a reply to the author's original article on "Modern Antitank Defense" (see RML No. 57, page 101). He emphasizes the need of mobility and ability for rapid change of direction for the antitank weapons. In a future war, especially in open warfare, a defense against tanks must be devised for (a) infantry front line, (b) defense of rear areas (for example, between the division and corps artillery positions), (c) tactical vital points behind the line such as higher headquarters or railway centers. The defense for the antitank vehicles in reaching their previously reconnoitered positions, depends on speed against the hostile artillery and low-flying aircraft. The whole defense scheme depends on excellent communications to give the timely warnings to enable positions to be occupied. The author believes that a division sector is $2\frac{1}{2}$ miles in breadth and that it is erroneous to spread the 30 antitank guns over this area. Mass use from the previously reconnoitered position is his solution. Effective firing range is given as 650-860 yards.

The author also states that because of the briefness of the duel between tanks and antitank weapons, and because of the fact that all tank attacks are usually preceded by a thorough reconnaissance by hostile aircraft, it is essential that this expensive weapon be withheld from the general combat and not be brought into action until the hostile tanks are actually visible.

Antitank weapons should not be utilized as antiaircraft weapons, as this would nullify their use for antitank purposes.

If by clever use of terrain and time of day or an opportune fog, the tank is able to reach its objective before the antitank defense position can be occupied, then in all probability the tank will be victorious.

(6) GEDANKEN EINES FRANZÖSISCHEN ARTILLERISTEN ÜBER VERBINDUNG ZWISCHEN INFANTERIE UND ARTILLERIE IM ANGRIFF. [Cooperation between infantry and artillery.]

An abstract of article by Colonel Buchalet, which appeared in the "Revue d'Artillerie," for August, 1934. (See RML No. 56, page 126.)

(7) DER POLNISCHE GRANATWERFER 30 UND SEINE VERWENDUNG IM GEFECHT. [The Polish grenade thrower "30" and its use in combat.]

Data and peculiarities: weight, about 7 kilg.; weight of projectile, 700 gm.; caliber, 46-mm.; length of grenade thrower, 64-cm.; maximum range, 700 yards, minimum range, 100 yards; muzzle loader, etc.

(8) TAKTISCHE AUFGABE NR. 5. [Tactical map problem No. 5.]

Discussion and solution.

(9) TAKTISCHE AUFGABE NR. 6. [Tactical map problem No. 6.]

Continuation of Map Problem No. 5. Requirement: Decision with brief reasons, and actions taken.

18 March 1935

(10) AUS GROSZER ZEIT VOR ZWANZIG JAHREN. VERWENDUNG VON NACHRICHTENMITTELEN IM ERSTEN KRIEGSJAHR UND LEHREN DARAUS FÜR HEUTE. [Twenty years ago. Communication experiences on the Eastern Front.] (II) Colonel Fellgiebel

In this second installment Colonel Fellgiebel discusses the communication problems on the Eastern Front in 1914.

Although conditions were far from ideal, the German Ninth Army at Lodz had communications with all corps and some of the divisions, especially the combat divisions. All corps animal-drawn wireless stations were assigned for this purpose.

Although the equipment of 1914 was limited by rigid regulations as to its proper use by the army division and general headquarters, it was made to suffice. Much improvement was shown by May, 1915, in equipment and its use at Brest Litowsk.

The pre-war ideas of installation of communications were not impracticable, but the trained troops to operate same were not available. Since the wireless stations were animal-drawn, their services were lost while on the march. During these moves wireless communication had to be maintained by the fortress stations. The greatest difficulty was experienced in the time it took for a message to reach its destination. In one instance it took a message 31 hours to reach the headquarters for which it was intended. Such cases can only be controlled by strict regulations, and in all large units several wave lengths must be used, keeping one always open for emergencies, or that marching stations can periodically set up their equipment and call in for instructions.

These conditions can not exist at present because of our motorized wireless units which can operate while en route. It is faulty to retain the same wave lengths, call letters, and even the code keys for weeks and even months.

Although the communications were better organized in the east than on the Western Front, the foregoing are good examples of how poorly prepared the communication service was at the outset of the War.

After twenty years there are still many problems unsolved or in process of solution, such as motorization and aircraft. The solution of these may mean the saving of much blood and possibly a defeat.

The communication service is the nervous system of an army; if it fails, it severs connection between head and body—between command and combatant troops.

(11) DIE JURISTISCHE GESCHICHTSAUFASSUNG. [Legal historical versions.] Lieut. General Marx, Retired

Every month new regimental histories appear on the market written by former active or reserve officers. Anyone who has had the time and opportunity to read all of these histories will note that the greater the elapsed time period between the occurrences and the writing, the better the book. Many "memoir" type histories were hurriedly compiled by inexperienced authors during the stress of the money fluctuation. Sales of these books gave little returns due to the inability of former comrades to pay for the same. These authors can readily understand why the recently written histories are so superior to their prosaic memoirs written the first year after the war and were of interest only to those mentioned therein. The recent histories are generally written in a more interesting vein, some of them being masterpieces and offering considerable instructional matter to the military. It is a shock to read the historical versions given in these books. Most authors could not resist giving their personal judgment and criticisms, not only of the questions involved in the major operations, but also on the historical events leading up to the World War. There is a great similarity in the historical versions derived from these personal analyses and criticisms. These books naturally are extremely dramatic and in their historical relation they see only the accomplishments of individuals, mostly outstanding men. They do not recognize historical necessities, as for example, the collapse of Austria-Hungary; instead, they place all the blame on the "scoundrels" (Moltke, Bülow, Falkenhayn, Bethmann, etc.). The statements of these officers are much more serious since their historical versions deal with foreign policies that are purely legal in nature.

For example, there is hardly a regimental history in which the author, when referring to May, 1915, fails to give vent to his hatred of the Italian politics. If that regiment happened to be on the east front at that time and could hear the hurrahs and celebrating fire of the Russians, you can always find the author in fits of anger refer to the honor, righteousness, moral obligations, etc., that mean so much to a people but which never existed in foreign politics, never had, never will, and could not exist. There is nothing we can learn from these statements; for example, the damning of the practical Italian politics in the World War when viewed from the standpoint of internal political morals. The Italians had very cleverly

utilized its partnership to the Triple Alliance against France in securing the rival North African states. Then they cleverly waited to observe the trend of the War and then utilized this one opportunity to restore people of her own blood from the crumbling Austrian Empire. The only criticism of the Italian political action is the fact that they waited, in breaking the alliance, until the time when General Mackenson was rolling up the hostile positions, instead of when Ivangorod was fought or when the Austrians suffered a great defeat in Serbia. That seems to be the only accusation we can make of the Italian politics. The necessity and usefulness is the only basis for external politics, which is another platitude which every Englishman believes in and which has made possible the establishment of the British Empire. The other German legal point of view concerns only the minor current events in peacetime which may absolutely be necessary and constructive to make an international incident of a flag salute or the release of a criminal or border disputes of herring fisheries, etc. The German authors never questioned the major foreign policy decisions and never will question them.

Many readers when perusing these sentences has probably thought, well it is probably so, but that does not mean that he will publicly express himself as believing it. Also, many reader will have thought, now this should not appear in a professional military book; writers of other nations do not expose or express themselves as we have. Still reference to these platitudes indicate how these lie with us. The views of the officers referred to in these regimental histories today are a fresh indication of this attitude. Writers fail to appreciate that professionally the military leadership during a war is but the continuation or execution of political actions, and erroneous political views have a decided effect on military actions. An example from the history of the last war:

The followers of the Delbrück school positively state that the "great Eastern advance" in 1914 would have been the correct solution, and with it we have the astounding statement that our western opponent would not have advanced as through Belgium. Now just imagine between Metz and the Vosges Mountains: there is room for but eight army corps; the enemy had, including its reserve divisions, about forty army corps. They had to place four or five army corps, one behind the other, on one road; the advanced echelons, if not engaged, would in a short time die of hunger. And we expect the hostile statesmen and military leaders to commit such an offense to the people and country. They are supposed to make this error, while the dispute relative to herring fisheries in peacetime is considered a major political question. All this fourteen years after the time when the British moved their troops through the Portuguese Delago district to get at the Boers, ten years after the time when the Japanese celebrating the British example, moved through neutral Korea against the Russians, and when the Japanese sank the Russian ships in the harbor of Chinese Chefoo. What if the enemy leaders would not commit this offense on their own country (such as marching through Belgium), what then? With good fortune it is possible to accomplish in the winter of 1914-15 on the Eastern Front that which was accomplished in the summer of 1915—"with good fortune are the words used."

Truly great advances could have been made on the Eastern Front and the Russians driven back in 1914, but in the meantime the enemy going through Belgium would have reached at least the Rhine River, probably the industrial centers of Westphalia. It still would have been necessary to cover our rear on the East Front. The covering force in Lorraine would have been enveloped a long time ago had it not withdrawn. It is apparent how a false conception of the political version can produce a false historical version of the military leadership in a war.

(12) ZUR LAGE IM PAZIFISCHEN BEREICH. [The situation in the orient.] Captain Scheibe

On 29 December, 1934, Japan gave warning that she would no longer adhere to the articles of the Washington Conference. The Japanese attitude was in accord with the stand Japan took at the London Conference and therefore was not unexpected.

In his speech before the Canadian Club in New York on 16 February, 1935, Secretary Hull, the American Secretary of State, referring to Japan's warning, reaffirmed the stand of the United States to uphold the Open Door Policy for the Far East and that she had not changed her views relative to the major issues of the 1922 Washington Conference, that these issues were interrelated and depended on one another. These remarks must be interpreted that the recent and final decision for naval rearmament fits into the old American Far East policy.

This recalls an indirect refusal in Japanese statements made by official Japanese sources in April of the previous year relative to absolute parity in armament and about their unique position relative to China. The question, how will the enunciated doctrine "Asia for Asiatics" guardianship of the Japanese power affect the Four-Power and Nine-Power (Kellogg) treaties is in abeyance in view of their basic ideas of the "open door for China" policy and the mutual guarantee of the island possessions and the small island groups of the Pacific. The action of the Japanese foreign minister, Hirota, before Parliament on 21 January, 1935, contained a vigorous warning to China "to share the noble efforts of Japan and avoid the definite requirements of the situation." These statements contained an appeal to Soviet Russia for its cooperation and explained to these nations interested in the Far East, Japan's stand as arbiter that she would maintain peace and order in this part of the world. In all respects this reaffirms the decision to have the Japanese Empire the center of the future development of the Far East. Chiang-Ka-Chek, on the contrary, is endeavoring to consolidate China by bringing the north and south together in accord. The defence of Kalgan against the invading Japanese along the Chinese-Mongolian border is without doubt an effort toward this union. The advance of the Japanese in south Mongolia, which is driving a wedge between Soviet Russia and China, follows its plan to isolate north China and also serve as military pressure to effectively support Japan's political efforts for reconciliation. To all appearances the Chinese government is cautiously opposing the Japanese proposals. In general she has done nothing in regard to these proposals except to look to England.

Foreign Minister Hirota in his important speech also dwelt on the Japanese aims regarding naval armament. The gist of his statements was "for a gradual reduction of armament in its entire extent" and the "complete abolition or far-reaching restrictions on offensive weapons," "to liberate every power from the threat of another power and to make it absolutely impossible for one nation to threaten another." In this speech nothing was said about Japan's stand on armament. On the contrary, it suggested the conclusion of a new treaty to replace the Washington Conference. The new treaty should be based on the true armament. The minister reviewed only the contents of the memorandums that had been sent to Washington and London as feelers. These memorandums state, due to the specifically mentioned future technical developments, that the present treaties created a decided difference in the comparative strength of the various navies which deprived them of the security requirements for the defense of Japan. Although a definite ratio principle had been adopted by the individual signatories of these treaties, these ratios were detrimental to Japan's prestige and Japan insists that they be altered and a considerably higher ratio for naval armament substituted. Also, that steps be taken to abolish or at least make drastic reductions in offensive weapons. Japan considered the ships of the line, the larger cruisers, the 10,000-ton cruiser with 21-cm. armament and the aircraft carriers as offensive weapons. Emphasis on the latter type is apparent since it comprises the most dangerous threat to Japan in operations which would be supported by large cruisers and ships of the line. The expression "grad-

ual reductions" is not a good expression, being difficult to define. It really should be "elastic" or "flexible." According to other information, Japan desires freedom in the construction of so-called defensive warships, deciding on their ratios from time to time as the occasion arises, by a mutual agreement between the powers constructing same. This recommendation is somewhat similar to the British formula for conference agreements but has not yet met the approval of the American delegations. This recommendation was further supplemented by an explanation given by the Japanese ambassador Saito to a representative of the American State Department. The essence of this explanation was that Japan had no desire to possess overnight a fleet equal to the strength possessed by America or Great Britain; on the contrary, it is desired only that a limit be established to which each nation would be free to build and be permitted to arm same as the situation dictated.

In addition to the naval warships, Japan is especially emphatic in its demand for an alteration of certain clauses of the Washington Treaty pertaining to the fortification of the Pacific. The Japanese naval minister makes special reference to the mandate occupation of the former German islands which serve as far-flung southern outposts, stretching toward Australia, and are situated at the exit of the Indian Ocean and between the American island possessions, Hawaii and the Philippines.

The general impression is that the collapse of the London Conference can mostly be blamed on America's opposition and that England is endeavoring to bring about a compromise. During the past few weeks it appears that an Anglo-American understanding has been reached. England, resorting to other means, similar to her efforts in Europe, is endeavoring to create the impression that none of the opposition to an understanding came from her. She is deeply interested in these demands, as she does not desire to unnecessarily antagonize Japan should the conferences be dropped, because of her deep interest in Australia's position and the internal political unrest in India. For years Australia has been apprehensive of Japanese aggression. A public announcement by the Australians made after the war at the time when the American fleet was visiting their waters reduced the commercial relations with Japan. The Australians had stated that should England desert them in the event of Japanese aggression, they would call on America for protection. Japan had previously been the principal market for Australian wool. England, because of this, is taking every precaution to prevent any friction with Japan. The willingness of the British throne to grant certain independence to India with stipulations purposes to draw the people of India closer to England and to distract their thoughts from the enticement of an emancipation of Asiatic nations from occidental domination. Both Canada and South Africa agree with America's attitude toward Japan. The differences of opinion of the British Dominions has forced British politics to be very conservative.

Considerable light has been thrown on the Anglo-American relationship by speeches of General Smuts of South Africa and the American Secretary of State Hull. General Smuts emphatically referred to the natural and necessary friendly relations between the American and English nations. Mr. Hull, in his speech of 16 February, 1935, emphasized that the maintenance of Anglo-American friendship took priority in all his efforts. In his references to the Kellogg Pact, the non-aggression and consultation conferences there were indications of the interest of the United States for a consolidated Europe which parallels the British thought. Very noticeable are the efforts for an understanding with England in the announcement by Mr. Hull of revisions in the American "Freedom of the Seas" doctrine. This doctrine served as America's pretext to enter the World War against Germany and formed the consecrated basis of American politics. This doctrine constituted a serious point of difference to England and as such played an important role during the War. One problem of this doctrine as related to America is worthy of consideration as viewed from several angles. Secretary of State Hull refers to America's conces-

sions "of renunciation of neutral rights and the thwarting of an aggressor nation by mass regulation by other nations as soon as it has been definitely determined that the specific nation will be considered the aggressor." This declaration indicates an American retraction from its special and dominating position as expressed in her doctrine of "Freedom of the Seas" which represents the latest expression of America. It indicates a concession for a positive policy for peace by the dominating political groups in America. Indirectly America has refuted its claims relative to the rights to take naval prizes, the contraband rights, and the blockade rights, and to a certain degree has conceded to Great Britain's dominating position as mistress of the seas.

America's concession of England's dominant sphere of influence over the East Atlantic and Indian Oceans, as well as the Mediterranean Sea is apparent. Without question America will side with Great Britain when the question of dominance of the Pacific is brought forward.

In general, the Anglo-Saxon politics is rapidly working for a consolidated Europe with special consideration of France for a free hand in the solution of the Far East questions.

(13) DIE WICHTIGSTEN LEHREN DES CHACOKRIEGES. [Lessons from the Chaco War.] Brandt

Abstract of this article will appear in the next number of this publication.

(14) KRIEGSSCHIFFE IM SUEZKANAL. [Warships in the Suez Canal.] Major Welsch

Just twenty years ago the German and Turkish dream of capturing the Suez Canal was shattered. It was the first time in history that warships were utilized to ward off a land attack. The British had stationed several of their warships in the canal to prevent sabotage and afford the artillery support in case of land attacks. On 26 January, 1915, General Wilson occupied the defensive positions of the canal, utilizing the battleships "Ocean," "Swiftsure," the light cruisers "Proserpine," and the French light cruiser "d'Entrecasteaux," and others in strategic positions in the canal to fire on the Turkish columns. The Turkish forces possessed only two 15-cm. howitzers commanded by the German Captain Heibey. In attack these two howitzers registered enough hits on the "Hardinge" to compel it to take refuge behind an island. The Turkish fire then centered on the "Requin" which was in danger of being sunk until the "Swiftsure" arrived to relieve the pressure and silence the howitzers. The British torpedo boat "O43" disrupted Turkish efforts at pontoon crossings, discouraging the Turks sufficiently to cease further efforts and withdraw.

The experiment of using warships, although successful, could have been the cause of destruction or damage of the canal by artillery fire, or closing of same by the sinking of one of the warships.

(15) BEGRIFFSBILDUNG UM DIE NEUZEITLICHE VERTEIDIGUNG. [Conception of modern defense.]

Referring to a previous article (see RML No. 57, page 101), the author endeavors to remind the reader of the danger of some military people who lack the ability for clear thinking to follow dogmatically schematic methods of applying principles, rules, experiences, to situations; for example, the set method of having three companies in the front line and one in reserve.

The question of defining various defensive terms is debatable, but for unison of thought and expression a study of the ideas of various divisions and foreign armies indicates that all believe in three fire systems. In the first system an effort is made to disrupt and retard the hostile attack by long range fire which seldom is decisive because the machine guns do not participate; second, there is the final protective line where all weapons join in a coordinated fire; and third, the fire of the breakthrough guns to repel the attacker in case of a penetration. Naturally, the final protective line is the most important and the attack should be broken down in front of same. The original lines must remain in the hands of the defense after the attack.

The artillery must definitely know the location of the main line of resistance.

The lower unit commanders (regimental and battalion) are more concerned in the main fire zone and the dividing line between it and the main combat area. The defense order must state what the individual commander is to do, the terrain he is to hold, and where the enemy attack should collapse, and the dividing line between the main fire zone and main combat area.

Tactics must recognize strongly formulated conceptions, as they are necessary for mental and individual training. Combat orders are not a definite conception of formula but are a clear-cut expression of commanders' decisions arrived at by the dictates of definite situations.

(16) BEFESTIGUNG DER USA.-MARINESTÜTZPUNKTE. [Fortifications of the U.S. naval bases.]

Examples of fortifications of naval bases warranting the expenditures of \$38,000,000.00 on fortification of U.S. Pacific bases.

(17) DIE MILITÄRISCHE DOLMETSCHERPRÜFUNG. [The examination of the military interpreter.] Captain Andriano

Explanation of requirements for examination of military interpreter.

(18) TAKTISCHE AUFGABE NR. 6. [Tactical Map Problem No. 6.]
Solution and discussion.

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(4) THE BEGINNING OF THE COAST SURVEY. West

(5) SELECTION AND PROMOTION IN THE NAVY. Lieutenant Becker, Jr.

(6) THE DESTROYER GROWS UP. Pratt

(7) VISIT OF RUSSIAN SQUADRONS IN 1863. Lieutenant Laurentz, Imperial Russian Army

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(8) SEA POWER. Rear Admiral Stirling, Jr.

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(12) SECURITY OF NATIONAL INTERESTS. Rear Admiral Greenslade

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(13) PROBLEMS OF THE PACIFIC. Prak

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(16) THE RELATIONS BETWEEN FARRAGUT AND PORTER. West

NAZIONE MILITARE (Italy)

(Formerly "Esercito e Nazione")

By Captain M.D. Taylor, Field Artillery

January 1935

(1) EVOLUZIONE DELLE LEGGI SUL RECLUTAMENTO. [Evolution of the recruiting laws.] Balboni

(2) LA PREPARAZIONE MILITARE DEI GIOVANI PRESSO GLI ANTICHI. [Military preparation of the youth among the ancients.] Borgnini

(3) LA ORGANIZZAZIONE DELLE NAZIONI PER LA GUERRA.—IX. L'AUSTRIA E L'UNGHERIA. [The organization for war of Austria and of Hungary.] Franchini

(4) MARCE CELERI IN MONTAGNA. [Rapid marches in mountainous country.] Fornara

(5) PRATICA ARTIGLIERESCA: IMPIEGO DELL'ARTIGLIERIA DIVISIONALE. [Artillery tactics. Employment of division artillery.] Camèra

(6) I FUMOGENI, AUSILIARI DELLA MANOVRA. [Smoke an aid to maneuver.] Cardona

March 1935

(7) CULTURA MILITARE ED EDUCAZIONE NAZIONALE. [Military training and national education.] Miraglia

(8) L'ADDESTRAMENTO PRE E POSTMILITARE IN AVIAZIONE. [Flying instruction prior to and after the period of compulsory military service.] Fischetti

Young Italians are given the opportunity to begin their flying training prior to their period of military service. First, they may attend glider schools where they are instructed by expert pilots in air navigation. They may also take flights in local "flying clubs" which are squadrons organized to facilitate the training of reserve pilots in their leisure hours. In reward for their pre-military work, these young men receive the grade of "Pre-military Pilot." When the time of their military service comes, they complete their flying training in the army aviation schools. They fit quickly into the air arm, and the period needed for elementary training is greatly reduced.

(9) GLI INSEGNAMENTI DELLA SAAR. [Teachings from the Saar.] Myriel

(10) L'ASSETTO TERRITORIALE DELLA LIBIA. [The territorial organization of Lybia.] Pellegrineschi

(11) LA MANOVRA DELLA FANTERIA NEL COMBATTIMENTO AUTONOMO. [The maneuver of infantry in open warfare.] Cardona

Maneuver is the art of employing a system of forces to obtain the greatest possible success at a decisive point, thereby obtaining compensation for possible reverses occurring on secondary fronts. In maneuver lies the only hope of the commander of inferior forces in the face of superior strength. It provides for the commander of superior forces the means of utilizing his superiority to obtain overwhelming results. To maneuver is to choose the most certain and the least expensive way to obtain decisive results.

Maneuver requires both a bold and determined commander and maneuverable troops. This happy combination can assure victory by a maneuver of fire, of movement, and of engineering works.

(12) MASCHERAMENTO DELLE ARTIGLIERIE PESANTI. [Concealment of heavy artillery.] Mascagna

A study of the camouflage operations in concealing a battery of heavy howitzers.

(13) ZAPPATORI DEL GENIO AL PASSAGGIO DI UN CORSO D'ACQUA. [Engineers in a stream crossing.] Amodio

A description of the engineering operations in constructing three foot and animal bridges across the Mignone, each 20 to 30 yards long.

(14) IL SERVIZIO TELEFERICO NELLA GRANDE GUERRA. [Transport by overhead cables in the World War.] Maglietta

Because of the mountainous character of the Italian battle front, the transport of men and supplies by aerial cables was organized. Indeed, preparation had been organized as early as 1906. Two companies had been given contracts prior to the War for the construction of the special equipment. On the outbreak of war, this transport service assumed considerable importance. At some points on the front all supplies were advanced into the Alps from the plain by overhead cables. At the end of the War there were 918 cable lines in operation.

(15) ALLE ORIGINI DEL SERVIZIO SANITARIO MILITARE—ISABELLA DI CASTIGLIA. [The origins of the military medical service. Isabel of Castile.] Casarini

PIONIERE (Germany)

By Captain H.D. Vogel, Corps of Engineers

February 1935

(1) 175 JAHRE PIONIERAUSBILDUNGSVORSCHRIFTEN. [175 years of engineer training regulations.]

Military engineer organizations in Prussia up to the year 1810, consisted of an Engineer Corps (composed of officers only), a Ponton Corps, and a Mine Corps. There was no independent organization of sappers, and the work that such a group would normally undertake was performed by infantrymen under the direction of engineer officers.

The Engineer Corps was founded in 1729 by King Friedrich Wilhelm I and was so organized that its members would be able to perform the duties of field engineers in time of war as well as execute the design and construction of fortifications in time of peace. It followed that the officers composing it must possess a well rounded training and be extremely versatile.

The first technical troops of Prussia appeared in 1715, when a Ponton Company was formed in Berlin. This company was equipped with copper pontoons and was trained in the construction of all types of military bridges. The Ponton Corps was organized in 1797, being equipped with new wooden pontoons in place of the old copper boats. The unfortunate campaign of 1806 resulted in the disbandment of the Corps and the loss of its equipment.

Frederick the Great organized the first mine company in 1742 and two years later a second one was created. The two companies were united under a special chief and formed into a Mine Corps in 1758. Third and fourth companies were added in 1772 and 1773.

Training regulations were sketchy in nature for each of the three technical corps, and consisted mainly of instructional letters issuing from the King or the field commanders. All pertained more directly to combat duties than to peacetime methods of training.

In 1810 the three technical corps were welded together to form a nucleus for the Pioniers of the German Army. The brunt of the burden immediately fell upon the officers of the Engineer Corps, for little of value was inherited from the Pontoniers and Miners. In 1816, in spite of great difficulties, a Pioneer Department became definitely established. The lack of training regulations was now severely felt, and all efforts were turned to evolve satisfactory manuals from old handbooks and text books.

A "Handbook for Pontoniers, With Special Reference to Their Field Duties" was published in 1793-94, to be followed by a second edition in 1830. This handbook was a ponderous work in two volumes, with greatest emphasis laid upon river crossings and bridge building. A board was created in 1833 to weed out non-essentials and evolve a practicable manual, but after nine years' work was disbanded in 1842 with little accomplished. Meanwhile, two officers had been working on a "Ponton Regulations", and this book made its appearance in 1843. It was the first real ponton manual of the Prussian Army. In 1865 was published "A Sketch of Ponton Drills and Service Regulations." Special regulations for the newly developed light bridge trains and advance guard trains made their appearances in 1854. These were combined with regulations for heavy bridge trains in 1865.

After the War of 1870 light bridge trains came into greater use and, because new equipment had been developed, a new manual of regulations was demanded. This was published in 1874, and later editions were put out in 1891 and 1902. Still further developments in ponton equipage occurred in 1910, and therewith was published the "Pontoneer Manual." Pioneers of the World War received their instruction from this manual.

After the World War, in 1925, new manuals on ponton bridges and bridge construction made an appearance, and in 1927 an additional manual on ponton bridges was published.

Bridging expedients were covered first in a manual published in 1894; later in publications of 1902 and 1907. A handbook entitled "Bridge

Building," including lessons of the World War, appeared subsequently in 1923.

Field regulations for sappers and miners date from 1855 and follow about the same course of development as has been traced for the other technical manuals. In every case the greatest changes in existing regulations were effected by the War of 1870 and the World War. Principles of field fortifications have, of course, greatly changed in recent years with developments of modern warfare, and lessons of the World War are summarized in publications of 1923 and 1932, entitled "Field Fortification Manual" and "Light Field Fortifications."

The World War also showed the great importance of engineer demolitions and obstacles, and gave evidence of the great difficulties that must frequently be overcome in effecting them. As for the successful accomplishment of all other engineering activities great importance is placed upon peacetime education and training.

(2) *AUSBILDEN DES PIONIERZUGES IM GELÄNDE.* [Training of engineer platoons in the field.]

Purpose of the training summarized: To develop efficiency in bridge building and other means of river crossings; to teach the utilization of light foot bridges, rafts, and single pontons; and to illustrate the applicability to ferrying movements of oars, poles, motors, ropes, sails, etc.

The following tactical principles are illustrated:

(a) Surprise attack of a river line with or without air superiority; with strong or weak air defense.

(b) Side slipping over a river with or without hostile opposition from ground or air.

(c) March on a wide front over several restricted stream sectors.

(d) Pursuit.

The greatest difficulty encountered in all bridging operations is, of course, the simulation of hostile resistance to the crossing. Similarly, it is difficult to stage the drill at such a location that a swift and wide river must be overcome by the troops in training. Emphasis should be placed, therefore, on speed of movement, facilitated by careful preparations conducted well in advance of the actual crossing.

Three field exercises are described as follows:

Example No. 1: Schooling of troops in reconnaissance for the attack of a river line.

Example No. 2: Rapid bridging of a small watercourse in an attack with military equipment.

Example No. 3: Preparations for ferrying operations to be conducted during twilight hours or in the early morning.

The described exercises are specific in nature and designed for the terrain in the vicinity of Brandenburg and west thereof. Their value is lessened by the fact that they deal with the crossing of a relatively narrow canal instead of a wide and rather swift flowing river.

(3) *KURZAUSBILDUNG DER PIONIERE.* [Abbreviated training of engineer troops.]

Considering the time required to develop a professional soldier and the additional time required for imparting technical knowledge to him, would it seem possible to turn out a capable military engineer in a period of two years? An affirmative reply is in order only if the opportunity has been provided for certain necessary preparatory training. According to the author of this article the training course of an engineer soldier should consist of three parts: a general basic schooling, a pre-military education, and a two year period of service. In a voluntary army few artisans, craftsmen, and tradesmen will be found; hence some practical schooling of a technical nature is well in order. The pre-military training has as its purpose a hardening of the physical body, a teaching of military customs and regulations, a training in map reading and understanding of terrain, a development of powers of observation, and a perfection in small-arms range firing. The final two year period of service should be devoted to

infantry platoon training, bridge construction, employment of obstacles, field fortifications, terrain exercises, and maneuvers.

(4) GEFECHTSAUSBILDUNG DER PIONIERS. [Combat training of engineers.]

To what extent should engineers be trained for infantry combat—and what are the chances that they will be employed as infantry in future conflicts? Prior to the World War the sole duties of engineer troops were in connection with river crossings, demolitions, and field fortifications, but the days of stabilized warfare are now past, and future wars will be fought with highly mobile armies. This means that the duties of engineers will be increased many fold. Today we must look forward to assisting the movement of our own troops, protecting the flanks of the infantry, assisting advance guards and reconnaissance groups, lending technical support in the installation of obstacles, and maintaining communications. If adequate training is given in these many functions, little time will remain for infantry schooling, and, similarly, small opportunity will be found in warfare for the employment of engineers as infantry. The importance of their own combat duties will generally preclude their diversion to infantry service.

(5) KRIEGSERFAHRUNGEN ÜBER AUSBILDEN VON PIONIERSTOSSTRUPPS. [Training of engineer shock troops in the light of war experiences.]

The opinion is frequently expressed that in modern warfare hand-to-hand combat will not occur; the artillery will disposes the enemy and the infantry will occupy the new position. However this may be, it still holds that a soldier must be prepared for warfare and that he must be trained for all kinds of combat. If training is to be complete, he must be taught the battle of man against man, the art of close combat. Here is an important use of the engineer soldier, for in all wars of the past infantry shock troops have found pioneers of inestimable value. Someone must assist the fighters across no-man's-land, remove the enemy's obstacles, and lend technical aid in locating positions. A typical German shock battalion of the World War was organized to consist of: a staff, two shock companies, one machine-gun company, one mine-throwing company, one protective battery, and one platoon of flame throwers. The flame thrower (flammenwerfer) was prohibited by the "Dictum of Versailles," but its employment by engineers was previously of outstanding importance.

The engineer soldier should be prepared for shock action by taking away his pack and cartridge belt and equipping him with several bandoleers to be carried in his pocket, a steel helmet, a pistol (or rifle slung on his back), a bayonet, two sand bags containing grenades and two empty sand bags each, to be carried over each shoulder, entrenching tools, a gas mask, a pair of shears, rations and canteens, and a shelter half rolled from shoulders to hips. The small flame thrower was carried on the back to be employed against obstacles, strong points, machine-gun nests, and redoubts. It was of value in attacks on villages and against woods. Under its protection the large flame thrower could be brought forward to assist the shock troops by fire and smoke and to gain a definite superiority in morale.

During the siege of Verdun an attack was launched by shock troops of a battalion strength, assisted by engineers and a flame throwing company, against a sector between Douaumont and Vaux on 1 June, 1916. The purpose of the attack was to prepare for a general assault against Fort Vaux. The undertaking was entirely successful; Caillette Woods and the southern edge of the Vaux ravine in Chapitre Woods were taken, and the position was held. 66 French officers and 1850 men were taken prisoners, while 3 field pieces and 38 machine guns were captured.

(6) DIE AUSBILDUNG DER AMERIKANISCHEN INGENIEUR-OFFIZIERE. [The training of American engineer officers.]

Editorial comment on this article is as follows: "This excellent discussion has been taken from Number 26 (1933) of the 'Army and Navy Journal,' published in Washington, D.C. Its author is Major General Lytle Brown, Chief of Engineers of the American Army. The American Pioneer and Engineer Corps is the most distinguished branch of this army.

The Military Academy at West Point, originally only a training school for the engineer arm of service, has grown to become the outstanding educational institution for training American army officers. During its long existence great influence has been wrought upon it by engineer officers who have been in charge. As a result of its admirable history and traditions, a type of man has been developed, which is without reproach from a military-technical standpoint."

(7) PIONIERAUSBILDUNG IN FRANKREICH. [Engineer training in France.]

The basic assignment of engineer troops in the French Army is one battalion of three companies to each war strength division. Corps organization requires in addition the necessary bridge trains, while special troops of varying kinds are assigned to Army headquarters. The peacetime organization is somewhat different in that units are grouped according to their specialties, which include field pioneering (by sappers and miners), bridge building, ferrying, and electrical engineering. Specialized training of railway and water supply troops and troops charged with reconnaissance and maintenance of waterways is reserved for wartime, except that some generalized instruction along these lines is given to the combat units in peace. There is no provision for training special units in construction of fortifications.

For purposes of training the one year of active service is divided into two six-months periods. The first of these periods is devoted to recruit instruction, while the second is for more advanced work in the several specialties.

Engineer officers are sent for two years to their branch school at Versailles after graduating from l'ecole Polytechnique. A small number of officers are commissioned from the ranks after a minimum of ten years' service, and these too are eligible for the branch school. Subsequent training for all officers, upon completion of the branch school, is conducted at troop stations. Non-commissioned officers are given training which will allow them to function as officers in time of war.

(8) EINE FRANZÖSISCHE PLANAUFGABE. [A French map exercise.]

The French magazine, "Revue du Génie Militaire," contained in the May-June issue of 1934 an article entitled, "Use of Division Engineers in Defense." The substance of this article was a map exercise dealing with the employment of obstacles in a division sector. The map used for the study is of the vicinity of Rouvrois-sur-Othain, and the problem involved a zone defense of the Othain River, with obstacles and demolitions along the Crusnes River and outposts between the two streams. Division boundaries were St. Laurent-sur-Othain—Longinon on the west and Duzey—Pierrepont on the east. The problem is elementary in nature and presents no new aspects of the use of obstacles in defense.

(9) "L'ORGANISATION DU TERRAIN." [Organization of the terrain.]

This constitutes the closing installment of a translation from the French and is in some respects the most uninteresting of the series. It deals primarily with the construction of infantry redoubts and shell-proof shelters from several kinds of building materials. The following table shows the thickness required to provide protection against several calibers of guns:

Caliber	Hard Stone	Soft Stone	Sand	Loam
7.5 cm.	1.85 m.	2.55 m.	3.10 m.	5.10 m.
10.5 cm.	2.60 m.	3.60 m.	4.35 m.	7.35 m.
15.5 cm.	4.10 m.	5.65 m.	6.60 m.	10.00 m.
20.0 cm.	5.75 m.	8.10 m.	9.45 m.	14.50 m.

(10) SCHWEIDNITZ IM SIEBENJÄHRIGEN KRIEGE. [Schweidnitz in the Seven Years' War.]

The fortifications of Schweidnitz (in Silesia about thirty miles southwest of Breslau) played an important part in the outcome of the Seven Years' War, being subjected to four sieges and conquests between 1757 and 1762. The first conquest was by the Austrians on 12 November, 1757, when 6000 men and 180 guns were captured. It resulted in a uniting of the Austrian forces and a seizure of Breslau and Silesia. In 1758 the Prussians staged a comeback and recaptured the fort along with 5000 men and 230 guns, but in 1761 the Austrians were again successful and captured 3200 men and 220 guns. The third siege was made with a great superiority of force, losses on both sides being extremely large. The fourth and last conquest occurred in 1762 after a siege of two months, when the Prussians again took the fort.

(11) DEUTSCHE PIONIERE 150 KM IM RÜCKEN DES FEINDES. [German engineers 93 miles in rear of the enemy.]

After withdrawal of the German forces from the Marne they were moved to a position on the right flank of the First Army, on a line southwest of Chauny and north of Soissons. Here they were engaged in serious battle by the middle of September, 1914. Arrival of the Sixth Army was anxiously awaited, and the situation was rendered more uncomfortable by a lack of enemy information. Rumor had it that British reinforcements might be expected from across the channel almost any time to fall upon the German west flank and rear. On 12 September four railroad bridges near Amiens were blown up by patrols from two companies of the 18th Pioneer Regiment, whereupon orders were given the engineer troops to destroy railroad lines leading from the coast to the interior of France. This constituted a most daring undertaking, for it involved marching 93 miles behind the front into enemy territory against a hostile populace. A departure was made at 8:30 PM, 13 September, by small, highly mobile patrols consisting of one to three officers and ten to seventeen non-commissioned officers and men each. Motor transportation was furnished and each patrol was equipped with about 300 kilograms of explosives and electrical detonators. The movement was made at night without lights. After successfully completing their missions, the patrols began their return to the regiment on 19 September.

While it was proven by the expedition that engineer patrols are fully capable of making distant raids against hostile lines of communications, it appears likely that such activities in future wars will be sponsored largely by the air service. The article states in closing that experiments are now being carried on in the United States to determine methods of dropping both men and explosives behind hostile lines from airplanes in parachutes.

(12) WIRKUNG VON EXPLOSIONEN AUF GEBÄUDE. [Effects of explosives on structures.]

This is an article of technical nature, describing the effects of pressures resulting from explosives in the vicinity of buildings. Diagrams are used to illustrate the principles set forth.

(13) 17 JAHRE SPÄTER / EINE FAHRT NACH VERDUN. [17 years later —A visit to Verdun.]

Two German field soldiers return to Verdun in September, 1933, to look over the scenes of their struggles and record their impressions thereof. Five half-tone cuts are used to illustrate the story of their visit.

QUARTERMASTER REVIEW

May-June 1935

- (1) SERVICE OF SUPPLY IN MOUNTAIN WARFARE. (I) Captain Fletcher
- (2) A FOOTNOTE TO HISTORY. Major General Bash
- (3) OUR LAST FRONTIER—ALASKA. Major Holt
- (4) LAND-GRANT RAILROADS. Lieut. Colonel Shannon
- (5) A WISE MAN IN MOTLEY. Borth
- (6) THE QUARTERMASTER STOREHOUSE OF KNOWLEDGE. PROBLEM

No. 3

July-August 1935

- (7) THE ARMY'S GREATEST PEACE-TIME ACHIEVEMENT. Captain Graf
(8) JIKIRI'S LAST STAND. Lieut. Colonel Davidson
(9) THE BOMBARDMENT OF FORT SUMTER. Technical Sergeant Edmondson
(10) COMMISSARY ACCOUNTING AND OPERATION. Wilson
(11) SERVICE OF SUPPLY IN MOUNTAIN WARFARE. (II) Captain Fletcher
(12) NO MORE WARS! Healy
(13) PRINCIPLES OF FLEET OPERATION. Preble
(14) WHEELER FIELD. Captain Berry
(15) FORCED DOWN IN THE JUNGLES OF NICARAGUA. Staff Sergeant Heritage
(16) THE QUARTERMASTER STOREHOUSE OF KNOWLEDGE. PROBLEM No. 4

REVISTA DEL EJERCITO Y DE LA MARINA (Mexico)

By Captain M.D. Taylor, Field Artillery

January 1935

- (1) MANIOBRAS Y EJERCICIOS DE GUARNICIÓN. [Garrison maneuvers and exercises.] General Faupel
(2) LA CABALLERÍA EN EL COMBATE. [Cavalry combat.] Colonel Pavón Cortés
(3) PSICOLOGÍA DEL SOLDADO DE INFANTERÍA. [Psychology of the infantry soldier.] General de Bono, Italian Army
(4) APUNTES SOBRE LA INSTRUCCIÓN DE CONJUNTO EN LOS REGIMIENTOS DE CABALLERÍA. [Notes on training of cavalry regiments.] Colonel Díaz Salcedo
(5) MOTORIZACIÓN Y MECANIZACIÓN DE LA ARTILLERÍA. [Motorization and mechanization in the artillery.] Major de la La Lama, Spanish Army
(6) BREVE RESUMEN DE LAS OPERACIONES DEL CHACO. [Short summary of the operations in the Chaco.]
An outline of events from 1 March to 1 September, 1934. It is difficult to follow because of the absence of maps.
(7) LA CARABINA AUTOMÁTICA. [The automatic carbine.] Major Daniker
(8) CARROS DE COMBATE. [Tanks.]
(9) EL COMBATE DE LA CABALLERÍA. [Cavalry combat.] Lieut. Colonel Dellepiane

February 1935

- (10) EL EJÉRCITO Y LA EVOLUCIÓN SOCIAL. [The army and social evolution.] Colonel Peralta
(11) ¿GANÓ EL TENIENTE FLORWERDEW LA GUERRA MUNDIAL? [Did Lieutenant Florwerdew win the World War?] Lieut. Colonel Thwaites
The story of a charge of the Royal Canadian Horse during the 21 March offensive.
(12) ARTILLERÍA LISA MODERNA. [Modern smooth base artillery.] Colonel Hernández
(13) EL SERVICIO DE INFORMACIÓN Y SU MODALIDAD EN LOS REGIMIENTOS DE CABALLERÍA. [The organization of the service of information in cavalry regiments.] Colonel Díaz Salcedo
(14) LANZAMIENTO DE TORPEDOS DESDE AVIONES. [The discharge of torpedoes from airplanes.]
(15) EL OFICIAL, CONSIDERADO COMO CONDUCTOR DE HOMBRES. [The officer as a leader.] Colonel Gallardo
(16) CAMPANA NAPOLEÓNICA EN 1815. WATERLOO. [Campaign of Waterloo.] Colonel Manzanares
(17) INGENIERÍA SANITARIA VETERINARIA. [Sanitary veterinary engineering.] Major Cravioto
(18) UN TEMA DE ARTILLERÍA. [A map exercise involving artillery, cavalry and aviation.] Lieut. Colonel Edmunds, U.S. Army

March 1935

- (19) EL PUEBLO Y EL EJÉRCITO. [The people and the army.] Lieut. Colonel Guzman Cárdenas
 (20) PAPEL DE LA INFANTERÍA EN LA GUERRA. [The rôle of infantry in war.] Colonel Bourguignon
 (21) CARTOGRAFÍA MILITAR. [Military cartography.] Captain de Mendoza, Spanish Army
 (22) LAS INSTITUCIONES MILITARES DE SUIZA. [Swiss military institutions.] Colonel Sánchez Hernández
 (23) BREVE RESEÑA HISTÓRICA DE LAS AMETRALLADORAS. [A brief historical sketch of machine guns.] Lieutenant García Macías
 (24) EMPLEO DE LA CABALLERÍA EN EL COMBATE. [Use of cavalry in combat.] Colonel Chevallier
 (25) ENLACES Y TRANSMISIONES. [Liaison and communications.] Colonel Díaz Salcedo
 (26) LA AMETRALLADORA. [The machine gun.] Colonel Pavón Cortés
 (27) UNA REGLA DE CÁLCULO PARA LOS ARTILLEROS. [A slide rule for artillerymen.] Alcaraz
 (28) EL HERRAJE COMO FACTOR DE TRIUNFO MILITAR. [Horse-shoeing as a factor in military success.] Lieut. Colonel San Martín
 (29) DEFENSA DE COSTA. [Coast defense.] Schencke, Chilian Navy

REVUE DE L'ARMÉE DE L'AIR (France)

By Lieutenant Colonel C.H. Wash, Air Corps

January 1935

- (1) PROBLÈMES D'AVIATION D'ESCADRE. [Some problems of fleet aviation.] Lieutenant Lenoir (Naval Reserve)

Several terms have been used, more or less interchangeably, by French writers in this publication to designate certain portions of naval aviation, such as "L'Aviation Embarquée," which while it might be loosely translated as "Naval Aviation," refers particularly to aircraft based upon ships, whether carriers, cruisers, or submarines. It does not include shore-based aircraft. "L'Aviation d'escadre" is practically a synonymous term, meaning "Aircraft with the Fleet." "L'Aviation navale" is a general term including both ship and shore-based naval aircraft.

This article refers to certain problems of naval aviation: (a) Landing upon platforms by aircraft equipped with wheels; (b) Forced landings on water by land airplanes; (c) Dive bombing.

- (2) THÉORIE DES VISEURS CLEMENTI. [Theory of the Clementi bomb-sight.] (I) Clementi

- (3) CHASSE DE NUIT ET CHASSE DE JOUR. [Night pursuit and day pursuit.] Lieutenant Barjot

The author argues that night pursuit aircraft should be simply variants of successful day pursuit, except that night pursuit should always have a reasonable landing speed. He returns to war time experience to show that the monoplane was superior for night pursuit work, in both French and English air forces. He also suggests that for reasons of economy, day pursuit types, when rendered obsolescent by progress, should make very acceptable night pursuit types.

- (4) LE REPÉRAGE ACOUSTIQUE DES AÉRONEFS.—MÉTHODES ET APPAREILS. [Sound ranging of aircraft. Methods and apparatus.] (I) Lieutenant Léglise

The first of a series of articles on this subject. This article is confined principally to tests of French and Czechoslovakian apparatus.

- (5) L'"AIR CONTROL" BRITANNIQUE. [British "air control."] (I) Bouché

An extremely interesting account, by a well-known aviation authority of his personal survey of the British "Air Control" system in "The Middle East." The article covers the history of the Royal Air Force in this sphere,

its operations, methods, and equipment. Geographically, the survey extends from Cairo to Bagdad, on to the Persian Gulf and as far south as Aden, at the southern tip of Arabia. It is profusely illustrated and accompanied by excellent diagrammatic maps.

The author is particularly impressed by the tremendous demands made upon the Royal Air Force by the rigorous climate, the difficult terrain, and the distances involved. He details the daily life of the various units along the Imperial Route to India, relates their exploits, and misses no part of their efficiency, ingenuity, intelligence, and devotion to duty. He emphasizes the paucity of the forces involved and the consequent economy of the system in comparison with the cost of terrestrial forces which would have been required to obtain the same result. Details of troop movement by air, cooperation with armored-car units, the use of a "loud speaker" from the air to warn rebellious tribesmen, and the successful solution of the problems of supply and evacuation are all noted and should prove of interest to air officers.

February 1935

(6) HISTOIRE DE LA GUERRE AÉRO-NAVALE DANS LES FLANDRES (1914-1916). [History of aero-maritime operations in Flanders 1914-1916.] Lieutenant Barjot

A review of the British and French efforts to defend the channel ports from German aerial and naval raids from 1914 to 1916.

(7) LE REPÉRAGE ACOUSTIQUE DES AÉRONEFS.—MÉTHODES ET APPAREILS. [Sound ranging of aircraft. Methods and apparatus.] (II) Lieutenant Légière

A continuation of the study begun in the January number. A systematic and detailed study of anti-aircraft methods and equipment.

(8) THÉORIE DES VISEURS CLEMENTI. [Theory of the Clementi bomb-sight.] (II) Clementi

(9) L'"AIR CONTROL" BRITANNIQUE. [British "air control."] (II) Bouché

A continuation of the article on this subject in the January issue. The maps in this section are particularly interesting, as are the summaries of the Air Forces engaged. The author continues his account of his survey of the Royal Air Force activities and concludes with his personal opinion of the virtues and defects of the Air Control system. His conclusions are highly flattering to the Royal Air Force and he suggests the application of the system to certain spheres of French influence.

The author is careful to point out that it is necessary to consider the very special conditions, under which, and the very special zones, in which, the Royal Air Force operates; but granting both, it is obvious that in such special theaters an air force is the dominant arm. It is amusing to note that such ground forces as are required, are attached to the Air Force. The flat statement, "It (aviation) . . . cannot invest or capture and hold territory," can not be accepted without recording an exception in favor of "The Royal Air Force," which for thirteen years has been holding an enormous territory, most efficiently and economically.

March 1935

(10) TIR SUR CIBLES AÉRIENNES REMORQUÉES DE GRANDE SURFACE. [Fire against towed targets of large dimensions.] Grand'ean

A proposal to substitute a panel type of towed target for the almost universally used "sleeve" type in both aerial gunnery and anti-aircraft target practice. The general public is familiar with the commercial advertising "panel" which is towed by aircraft of all types from "blimps" to autogiros, to inform the public of the superior qualities of various beers or cigarettes.

The author purposes a large panel of this type, 120 by 20 feet, carrying the silhouette of an airplane for the first stages of aerial gunnery practice; the size of the panel to be gradually reduced in subsequent stages of practice. The advantages of this type of target in giving valuable data on

centers of impact and dispersion of fire seem obvious. All shots which fail to hit the small, jerky, and oscillating "sleeve" target are "lost." The panel target offers an opportunity for "sensing" the errors of fire which is now lacking. There are no practical difficulties in the procedure advocated, except that to obtain speed, a large fast multi-engined airplane is required. Any modern bi-motored bomber is ideal for the purpose. Since the panel can be rotated, even in flight, it offers a flat surface for attack from any desired angle.

(11) MOTEUR-CANON, BI-CANON LÉGER OU MULTITUBE LOURD. [Motor-cannon, light double cannon, or heavy multi-tube.] Lieutenant Barjot

A discussion of the relative merits of aircraft cannon. Apparently this doctrine of "bigger and better" is not an American monopoly in spite of its intensive application to every native problem, civil or military. During the late unpleasantness, the French evolved a 37-mm. cannon firing through the crankshaft of an Hispano Suiza engine. Unfortunately, it could fire only one shot during a single flight. They have since evolved a 20-mm. gun of the same type, which undoubtedly can fire as many rounds as its supporting airplane can carry. The author discusses the merits of the axial cannon with a relatively high muzzle velocity, against those of the multi-barreled gun [in this article, two short guns (36 caliber) mounted in the wings, firing projectiles with an initial velocity about 2/3 of that ascribed to the axial gun.]

The author examines the weight of the guns, the weight of the mounts, and their consequent effect on the structure, the weight, and the speed of the gun platform; i.e., the airplane, the muzzle velocity, and rate of fire of such guns, hence their tactical effect, but completely ignores the weight and the bulk of the large caliber ammunition required, both of which seriously affect design and tactics.

He concludes that the muzzle velocity of aircraft guns remains at the base of aerial combat. He reserves an exception for "night combat" where a moderate muzzle velocity and large volume of fire from several guns might prove efficacious.

(12) LE REPÉRAGE ACOUSTIQUE DES AÉRONEFS.—MÉTHODES ET APPAREILS. [Sound ranging of aircraft. Methods and apparatus.] (III) Lieutenant Légise

A continuation of two previous articles on sound ranging of aircraft.

REVUE D'ARTILLERIE (France)

By Captain M.D. Taylor, Field Artillery

January 1935

(1) LE GROUPE UNITÉ DE FEUX? [Is the battalion the fire unit?] Lieut.-Colonel de Mazenod

The author rises to protest against the current tendency to substitute the battalion for the battery as the fire unit of the artillery. He objects to reducing battery commanders to the rôle of executives who obey blindly the orders send down from the battalion. These captains are efficient technicians who control the fire of a battery which is as effective as a battalion of 77's.* There are serious technical difficulties involved in concentrating rapidly three such batteries on a common target. Such methods as have been developed may not stand up in war. Hence, let us not take away the observation post from the battery commander who has proved his worth many times in the last war.

(2) LA SÉLECTION ET L'ENTRAÎNEMENT DES TÉLÉMÉTRISTES. [The selection and training of range-finder operators.] de Gramont

(3) EMPLOI DE L'ARTILLERIE DE D.C.A. EN PAYS DE MONTAGNES. [Employment of antiaircraft artillery in mountainous country.] (I) Lieut. Colonel Viala

*The German gun has a lower rate of fire than the 75.

In mountainous country, the antiaircraft artillery encounters the following difficulties:

- (a) Insufficiency of roads.
- (b) Absence of suitable battery positions.
- (c) Existence of dead space in fields of fire.
- (d) Difficulty of establishing signal communications.
- (e) Rigors of climate at high altitudes.
- (f) Variable conditions of visibility.

The author examines the typical forms of mountain terrain as they affect the choice of positions. He concludes that positions in the bottom of valleys are generally undesirable although the dead space can be reduced by machine guns on the adjacent masks. A 50 mil. mask will prevent an antiaircraft gun from firing on a low-flying airplane that flies over the position. If valley positions must be taken they should be at a distance from the covering crest.

It is always preferable to take positions above the valleys if the road net permits. Here dead spaces disappear as do the fogs and haze that obscure the visibility in the lowlands.

(4) UN PROCÉDÉ DE RELÈVEMENT CALCULÉ. [A method of calculated resection.] Captain Delboy

(5) L'ÉTAT DU CORPS ROYAL DE L'ARTILLERIE DE FRANCE EN 1667. [The composition of the Royal Artillery Corps of France in 1667.] Captain Basset

February 1935

(6) L'ARTILLERIE DE CAMPAGNE DANS L'APPUI DIRECT DE L'INFANTERIE. [Light artillery in direct support of the infantry.] Lieut.-Colonel Ricard

The problem of direct support is essentially one of responding to calls for fire from the infantry. This involves:

- (a) The location of targets by the infantry.

(b) Signal communication between infantry and artillery and within the artillery between the observer who will adjust the fire and the guns which will deliver it.

(c) The technical problem of adjustment and fire for effect, made difficult by the need for speed, by the closeness of our infantry to the target and by the frequent necessity of unilateral observation.

Direct support can be made easier and some of the difficulties obviated. The infantry should have an organic weapon of curved trajectory capable of dealing with targets within about 250 yards of the front line. Thus the artillery can be reserved for missions deeper into enemy territory. The liaison detachment with the infantry is the agency to which the calls of the infantry should be directed and which will observe the fire of the batteries. Wireless telephony is the desirable means of communication. In order to provide shelter for the artillery observer who would otherwise be neutralized by the hostile machine-gun fire, the liaison detachment should have an armored, self-propelled observation post on a caterpillar tread, equipped with a radio telephone. In the absence of this specialized vehicle, the detachment may use a trailer pulled by a small tractor.

(7) EMPLOI DE L'ARTILLERIE DE D.C.A. EN PAYS DE MONTAGNES. [Employment of antiaircraft artillery in mountainous country.] (II) Lieut.-Colonel Viala

In planning an antiaircraft defense, it is essential to study the probable tactics of the enemy aviation. In this respect, we may safely assume that:

(a) All types of hostile ships will prefer to follow the most direct route to their objective, using as base of departure reentrant salients of the frontier.

(b) In hostile territory, they will fly over areas not defended by antiaircraft weapons.

(c) They will avoid following the axis of a valley, preferring to cross it laterally at a low altitude.

(d) They will fly at about the altitude of the principal crests.

(e) They will seek out the weak points in the antiaircraft defense and exploit them.

The defense against these tactics requires that all elements of the antiaircraft artillery, guns, machine guns, and listening posts be placed high up in the mountains. The maximum strength will be concentrated along the most likely directions of approach, but no areas can be entirely neglected. The absence of matériel for a perfect cordon defense should be compensated by mobility and a frequent readjustment of the defensive installations. No route of approach should ever be perfectly safe.

(8) PROCÉDÉS D'INSTRUCTION. [Instruction methods.] Major Moureton

(9) DÉTERMINATION DU GISEMENT ET DE LA DISTANCE. [Calculation of azimuth and map range.] Captain Etesse

(10) LES FORMULES DE SÉCURITÉ DANS LE STOCKAGE DE MUNITIONS. [Safety formulas for use in the storage of explosives.] Captain Senart

(11) LETTRES D'UN JEUNE OFFICIER D'ARTILLERIE PENDANT LA CAMPAGNE DE 1813-1814 EN ITALIE. [Letters of a young artillery officer during the campaign of 1813-1814 in Italy.] Colonel Tournaire

March 1935

(12) LE TIR CENTRALISÉ. [Centralized fire direction.] Lieut.-Colonel Rousseau

The evolution of the artillery is in the direction of its use in mass. The time is passed when fire in direct support of the infantry by battalion concentrations is to be considered as an exceptional manner of action calling for exceptional methods. The artillery must be organized so that this is the habitual procedure while the action of isolated batteries becomes the exception.

To facilitate centralized fire direction, the battalion needs a gunnery officer who will prepare, execute, and maneuver the fire of the battalion for the battalion commander. Under his direction the following operations will be carried out:

- (a) Tying-in topographically the directing pieces of the battalion.
- (b) Giving a common direction to the directing pieces.
- (c) Using the same meteorological data.
- (d) Calibrating the directing pieces.
- (e) Using the same lot of ammunition throughout the battalion.

The survey operations can be carried out in the usual manner. However, it has been suggested that these operations can be eliminated by the use of an air photo taken by an autogiro of the battalion installations, all of which have been marked momentarily by a suitable panel.

The centralized fire direction advocated in this article calls for no serious change in the organization of the battalion. At most it requires a reallocation of functions within the battalion staff.

(13) L'OBUSIER DE 400 À VERDUN ET LE FORT DE DOUAUMONT. [The 400-mm. howitzer at Verdun and Fort Douaumont.] General Franiatte

A description by the Chief of Artillery, Second French Army, of the fire of two 400-mm. howitzers against Douaumont in support of the successful attack of 24 October, 1916.

(14) LA NAISSANCE DE L'ARME CHIMIQUE. [The birth of chemical warfare.] Lieut.-Colonel Grenouillet

This article is essentially a review of the book, "The Gas Attack at Ypres, 22 April, 1915," by Dr. Rudolf Hanslian, the German gas technician. It studies the preparation, execution, and results of the first gas attack. Of principal interest is the critique of the attack by the principal participants including General von Tschischwitz, Chief of Staff of the XXIII Reserve Corps, Colonel Peterson, who commanded the engineer regiment which did the technical work, Doctors Helfinch and Haber, the chemical experts. Their conclusions are in general:

(a) The military authorities lacked confidence in the new chemical weapon.

(b) They blundered seriously in not having reserves at hand to exploit the initial success.

(c) The tremendous surprise obtained by the first use of gas was wasted to obtain a local success.

(d) The attack should not have been made if it could not be organized on the proper scale.

(15) EMPLOI DU PROCÉDÉ GRAPHIQUE DANS UNE SECTION DE RÉGLAGE PAR COUPS FUSANTS HAUTS. [A graphical procedure in high burst adjustment.] Major Labbé

(16) POSSIBILITÉS DE POINTAGE DES MATÉRIELS DE D.C.A. [The limitations of antiaircraft matériel in following a fast-moving target.] Captain Renauld

(17) MÉTHODE DE RATTACHEMENT PAR COUPS FUSANTS HAUTS. [Use of high bursts by a single piece to adjust several batteries.] Lieutenant Dusseris

REVUE DE CAVALERIE (France)

Lieutenant Colonel N.B. Briscoe, Cavalry

January-February 1935

(1) LA CAVALERIE RURALE EN FRANCE. [Rural cavalry in France.]

(I) Miquel

France has borrowed pages from the books of Hungary, Czechoslovakia, Germany, and Switzerland and organized horse activities to such an extent that they have become the national sport.

In the discussion of opinion in the country the author compares a million and a half automobiles, with seven hundred thousand people employed in the industry, to the three million horses who are working with and supporting twenty million people. He takes a well aimed shot at the columns and pages of the papers that are not only devoted to free propaganda for the motor industry but are used also to detract by cartoon and ludicrous word from the respect due the horse.

This first article of a series discusses Foreign Example, Public Opinion, Rural Horse Societies (Sporting Aims, Educational Aims, Social Aims, and Economic Aims, and the various means of attaining them) and the Rural Breeding Shows.

A future article will recount the results attained.

This system is the result of some fifteen years of effort, and it is very evident that all the continental countries are very serious about the horse situation.

(2) LES AUTOS-MITRAILLEUSES EN MÉSOPOTAMIE (1918). [Armored cars in Mesopotamia in 1918.] Colonel Thompson, British Army

This is a translation by Captain Labouchere from notes in English by Colonel Thompson.

(3) LES TRANSMISSIONS DANS LA CAVALERIE. EN MARGE DU RÈGLEMENT. [Communications in the cavalry. Notes on the regulations.] (II) Captain Becquey

The author continues the discussion of the various means used for communicating within a cavalry division in an attack situation, and accompanies the text by two very interesting sketches or diagrams of the set-up prior to the attack and of the set-up at the end of the first phase of the attack. The attack is a much more limited and deliberate affair, and the communications employ much more wire than we picture in American cavalry divisions. Every possible means is used, each in a suitable place, from radio-telegraphy, through message-carrying projectiles, to visual signals.

(4) AMBIANCE D'UN COMBAT VU À L'ÉCHELON COMPAGNIE OU ESCADRON À PIED. [The sequence of a battle seen from the viewpoint of the company or dismounted squadron.] (I) Captain Guérin

The author calls attention to the formations lately obligated by trench warfare, to the company commander's initiative as to: appropriate successive formations, direction, flank fires, security, liaison, etc., and especially to the abruptness with which problems are presented in warfare.

He takes the situation of the French First Army, 7 August, 1918, and runs down through the army, corps, division, brigade, etc., formations to the 34th Company, 9th Battalion Moroccan Riflemen.

The story is carried in a most interesting way through the receipt of orders, the taking of formations, the advance in the dark, halting in a wood, the designation of objectives 15 miles distant where the enemy trench is 200 yards (accepted with smiles), the artillery support, the losses, the reformation of the battalion as a company, the companies as platoons, the time for supply of rations and ammunition.

There are four maps, and the story is to be continued.

(5) LA GUERRE EN AFRIQUE. [The war in Africa.] (I) Captain Licart

The author opens with some very apt remarks:

"Officers are not prepared for the roles of instructors and leaders of native troops although the majority of them are called upon to serve with these troops in the course of their careers.

"In all the mass of instruction on the subject the officer going to duty with the native troops has only the prudent advice of the experienced, but, estimating this to be exaggerated, generally he does not follow it."

African warfare resembles our Indian warfare, the chase of Aguinaldo and his contemporaries, the chase of Villa. It is different from the massed formations. The author does not mention these, but he takes paragraphs from French reports and accounts, and from Arab sayings, and produces a sort of Field Service Regulations for this particular type of warfare. The Arab says, "Ten men are stronger than one and the enemy is stronger in front than behind or on the flanks," and thus the Arab fights with climate, terrain, immunities to diseases, and knowledge of the country, all on his side. The account describes the Arab in detail, his intelligence, fortitude, trustworthiness, habits, etc., and shows eminent respect for his ability as an enemy.

REVUE D'INFANTERIE (France)

By Captain W.G. Johnson, Infantry

January 1935

(1) TURENNE A TURCKHEIM. [Turenne at Turckheim.] Captain Vivet

The battle of Turckheim, in the campaign of 1674-1675, took place on 5 January, 1675. Although only 10,000 to 12,000 men were engaged on each side, it was the decisive encounter of the campaign; and Turenne, by bold and ingenious tactics, not only perpetuated the union of Alsace with France but gave this battle a military importance found in no other engagements up to the time of Napoleon.

On finding the German allies in a defensive position along the far side of the canal between Turckheim and Colmar, Turenne renounced the tactics of his day, which dictated a direct frontal attack, and left merely a holding force in front of the enemy while he moved his left column to Turckheim to strike the hostile flank. The maneuver was successful. Poor coordination and the absence of supreme control in the allied force contributed to the German defeat. With their base at Colmar menaced by the holding attack and their flank threatened, the Allies voted a withdrawal, which was effected during the night.

Speaking of Turenne, the author states: "To gain the victory, Turenne utilized all the resources of his wonderful genius. Daring, that surprised the adversary, sound of judgment and execution that left nothing to chance, tenacity and the will to win made him not only the victor on the field of battle but at the same time the liberator of Alsace."

(2) NAISSANCE ET ÉVOLUTION DU CHAR DE COMBAT EN FRANCE DURANT LA GUERRE 1914-1918. [Birth and evolution of the tank idea in France during the World War.] Lieut. Colonel Perré

(3) L'INFANTERIE ET LES CHARS DANS L'ATTAQUE: CAS CONCRET. [Infantry and tanks in the attack.] By Major "R.L."

The author proposes the study of various theoretical examples as a practical means of acquiring a thorough knowledge of regulations covering the conduct of infantry (and tanks) in the accomplishment of its mission.

The example that he provides is a map problem situation involving a field army, which, after initial successes, has been stopped by the enemy occupying a hastily organized but strong defensive position. With this situation and the orders of a corps commander for a resumption of the offensive, the problem begins by discussing the decision to be made by the division commander.

This decision involves consideration of the scheme of maneuver, missions falling to subordinate units, direction of effort, and attack dispositions. Each is separately treated.

The scheme of maneuver is based on the assigned mission, information and probable intentions of the enemy, the terrain, and the troops and arms available. After considering these factors a definite scheme is adopted. The maneuver is divided into three phases, considered essential to effect reorganization, displacement of artillery, and recovery of coordination and control after each objective has been taken.

The dispositions and missions of subordinate units are closely tied to the factors in the scheme of maneuver and are prescribed accordingly.

Zones of action are assigned in conformity with missions, terrain, and the means of combat.

The author devotes several pages to the correct distribution of the battalion of light (slow) tanks. The needs of each of the three regiments, the suitability of the terrain in each zone for tanks, and the requirements of the main effort influence the distribution of the tanks. The regiment making the main effort was allotted two companies with the restriction that the second company be held in reserve until the first objective had fallen.

The six battalions of artillery are equally divided for direct support of the three regiments attacking abreast, even though the main effort might seem to need greater support; it, however, has the bulk of the tanks. A thirty-minute artillery preparation is considered advisable. The halts on each objective are to be governed by the time required for the forward displacement of the artillery.

The second part of the problem deals with the situations in which each regiment and the engaged tank battalion found themselves at H plus four and one-half hours. Corps provides additional means for continuing the advance. The attack must be suspended for reorganization and disposition of the suspended for reorganization and disposition of the supplementary means. The new decisions and plans are discussed. Several pages are devoted to logistics; others to the key position to be taken, its importance, and how it can be captured.

Emphasis is put on the careful calculation of time required to accomplish certain things and willingness to commit all resources—even sacrificing reserves—when time and necessity demand.

(4) INSTRUCTION DES CADRES DE L'INFANTERIE: ÉTUDE DE CAS CONCRETS. [Instruction of officers and noncommissioned officers of infantry. Study of concrete examples.] Lieut. Colonel Guigues

I.—Study of outflanking movement made by a reserve battalion to aid in reducing resistance holding up an assault battalion.

In this exercise, which might be termed a combined map and terrain problem, the author depicts a situation wherein a regimental commander commits his reserve battalion to outflank hostile resistance that has stopped his assault battalion. The author advocates the use of class room discussions, each to be followed by actual operations carrying out the points covered in the conferences. The first session should be devoted to regulations governing outflanking operations. Then on the ground the students will stake out locations of organizations and command posts, and establish the communications system, covering all matters involved prior to receipt of the regimental order. Again in conference, the duties to be performed

by all officers and noncommissioned officers on receipt of the order for the flank movement are taken up, and the preparation of the battalion order discussed.

The succeeding conference will carry the problem to the jump-off and attack. In this the instructor should introduce various incidents that will emphasize errors and neglects on the part of leaders as well as peculiarities of the terrain that require modification of the maneuver.

The occupation of the captured terrain will be carried out at the end of the exercise in order to clearly bring out that it is the natural finish of every attack, and that the attack proceeds to a limited objective unless stopped by unsurmountable resistance.

A general critique follows—given in so far as possible on the ground—to answer all questions brought out by the exercise. As soon as possible thereafter the exercise will be carried out by troops and all the matériel used in campaign.

The author's summary of work to be performed upon receipt of the regimental order is worthy of note.

By the battalion commander:

(a) Contact to be established with surrounding units with a view to determining the exact situation of units at the time the order is received.

(b) Contact with supporting artillery.

(c) Preliminary assembly of commanders of rifle companies, machine guns, and mortars in order to give them brief instructions concerning his intentions, reconnaissances to be made, and the redistribution of missions.

(d) Organization of observation to reconnoiter the enemy resistance that must be destroyed or neutralized.

(e) Verbal orders.

By the battalion, company, detachment, and supporting artillery commanders:

(a) Detailed reconnaissance of the terrain to be crossed.

(b) Disposition and placing of units.

(c) Determination of the axis of effort.

(d) Organization of the infantry base of fire (automatic weapon groups).

(e) Artillery support.

(f) Liaison between units and with neighboring units and the support to be asked of them.

(g) Preparation for the jump-off.

(h) Technique of the maneuver.

(i) The advance.

(j) Successive objectives (if necessary).

(k) Occupation of captured ground.

(l) Contacts to establish.

(m) Reports to be sent.

(n) Command posts (artillery, battalion, company).

(o) Replenishment of ammunition, smoke, flares, etc.

(p) Final orders and sundry reports.

II.—Study of the engagement of a reserve battalion passing through an assault battalion that has been unable to continue the attack owing to losses.

This exercise is to be conducted in a fashion similar to that demonstrating a flanking movement. Additional duties falling to commanders are:

(a) Liaison with assault battalion to learn the situation of its units, position occupied, difficulties encountered, etc.

(b) Preliminary selection of a line of departure favoring passage of lines.

(c) Detailed reconnaissance of the terrain with a view to determining exact line of departure and dispositions to be adopted.

(d) Routes to be used and formations adopted to effect passage.

(e) Determination of where the line will be crossed as well as the method of crossing and extent of initial advance.

(f) Signals, flares, supporting fires, etc., as in other situations.

Among the means most likely to facilitate the passage of lines is the creation of gaps in the line to be crossed. Such gaps should be unmistakably marked for the convenience of the units passing through them.

Special precautions are necessary when preliminary deployment occurs in rear of the line to be crossed, as there is this greater danger of fusing the fresh troops with the former assaulting units. Preliminary deployment is possible where advantage can be taken of the cover of a crest close to the front line.

Whatever methods are used, it must be clearly understood that the passage takes place at one time, in one wave, and that the advance must rapidly go as far as possible in the first bound. Moreover, the direction of the attack must be thoroughly understood by everyone.

When the conformation of the ground permits, the fire of automatic weapons should be employed for five overhead or through the gaps to support this difficult operation.

The hour for placing the troops in position as related to the hour the passage is to occur requires careful calculation.

The success of the operation depends largely on the way it is begun.

(5) POLOGNE: LA DÉFENSE DES ARRIÈRES DES GRANDES UNITÉS CONTRE L'AVIATION ET LES ENGINS BLINDES. [Poland: Defense of rear areas of large forces against aviation and armored vehicles.] Captain Lelaquet

The reviewer comments on the system of defense of rear areas proposed by Captain Berka. Although air and tank attacks are entirely different, Captain Berka contends that the means of defense against both should be centralized into one system in order to economize on personnel and matériel. His system would consist of an observation and warning net; a net of specialized communication; defensive means including artillery, small cannons, machine guns, and infantry and engineer units; and antigas detachments. In the absence of such weapons, other available means must be used. Rapid means of transport for all weapons are advocated. The direction and coordination of the defense would be under one additional officer on the staff of each division. The author and reviewer both comment on the added encumbrance involved in supplying adequate defensive measures for rear areas but believe it essential.

(6) RUSSIE: L'ATTAQUE INFANTERIE-CHARS SOUS LA PROTECTION DE FUMÉES. [Infantry-tank attack under smoke protection.] (From Polish "Infantry Journal," November, 1933)

The Russian technique of tank operations envisages three attacking waves having for objectives:

- (a) The hostile artillery (attacked by tanks for distant action).
- (b) Infantry automatic arms and mortars (attacked by direct support tanks and accompanying tanks).

The following procedure is outlined in the "Journal of Technique and Armament," Nos. 8 and 9 of 1934:

I.—OBJECTIVES TO BE "SMOKED"

- (a) The forward edge of the line of resistance where a part of the automatic weapons and antitank guns are located.
- (b) The zone of infantry mortars and antitank guns—capable of engaging the direct support tanks—which can be found at about 500 yards in rear of the line of resistance.
- (c) The zone occupied by artillery and infantry reserves at two to three miles in rear.

II.—MEANS USED TO LAY SMOKE

- (a) Infantry and artillery weapons firing smoke shells.
- (b) Smoke pots.
- (c) Smoke-laying means installed on tanks "of distant action."

III.—COORDINATION OF THE ACTION OF TANKS, INFANTRY AND SMOKE

The problem consists of covering with a curtain of smoke the objectives of the different waves before the tanks reach these objectives. Conse-

quently: (a) The action of smoke shells on the objectives of "distant action" tanks and direct support tanks should precede the "debouche" of the tanks in order that the curtains of smoke to mask their approach will be entirely developed when the objectives are reached. This mission can be delegated to the artillery and mortars. (b) The establishment of the curtain of smoke in front of the line of resistance can not be begun until several minutes before the debouche of the close accompanying tanks and infantry. This curtain must be laid by smoke pots owing to the presence of "distant action" tanks already out in front, which prevents the artillery and mortars from firing. (c) When the "distant action" tanks penetrate to the hostile artillery areas they will be deprived of the support of their own artillery. To permit them to continue their action and to screen them from hostile weapons they can very profitably use their own smoke-laying weapons.

The article closes with a table of fires showing the time schedule for smoke laying.

February 1935

(7) L'INFANTERIE DANS LA MANOEUVRE EN RETRAITE. [Infantry in a withdrawal.] Lieut. Colonel Desré

A good discussion is presented of the difficulties involved in a withdrawal, the extreme danger of breaking contact in daylight, and the methods used and measures taken to facilitate the withdrawal of a large unit to a new position several miles to the rear. An historical example of the withdrawal of the 1st Colonial Brigade of the Moroccan Division is given to illustrate the hazards of a retreat over terrain subject to hostile observation and fire when neither darkness nor artificial fog cover the operation.

After a long preliminary discussion, the author introduces his technique of the mechanics of a withdrawal executed at night. He terminates his article with a map problem withdrawal in which he discourses on the duties of the commanders of each echelon.

(8) LE TIR VERTICAL DANS LES RANGS DE L'INFANTERIE. [Vertical (high angle) fire in the ranks of the infantry.] Major Delalande

The author shows the need for an increase in mortars allotted for the direct support of infantry. He maintains that the artillery assigned for direct support can not be counted on to place concentrations with sufficient rapidity nor in sufficient quantity when and where needed by infantry. In many situations direct support artillery can not put effective fire on defiladed areas. He ridicules the idea of meeting engagements as being merely momentary, and declares that both adversaries of the "meeting" are immediately going to struggle for key points and "dig in" on whatever favorable terrain they find. Thereafter, until one or the other is dislodged the battle becomes static, and consequently the force that is best equipped with accurate weapons for high angle fire will be the one most likely to force the other out of his position.

The author apportions supporting fires as follows:

(a) Direct support artillery.—Execution of methodical, prearranged fires without thought to summary missions such as: "Fire a concentration on the three trees."

(b) 120-mm. mortars.—Assigned three per regiments, to destroy thick dugouts, wire entanglements, and tank barricades, as well as other targets previously destroyed only by divisional howitzers after much delay.

(c) 81-mm. mortars retained under control of the regimental commander.—Direct support fires into defiladed areas, and timely supplement to artillery fire in direct support, which often ceases too soon or gets too far ahead of the infantry.

(d) 81-mm. mortars of battalions.—Constitute the framework of the base of fire, the solution of unforeseen problems, the destruction of small entanglements discovered on the reverse slope, the instantaneous destruction of automatic arms under light cover at short distance; convenient means to neutralize or destroy hostile fire that is checking the advance; lastly, the reinforcement of the small mortars mentioned next.

(e) Company mortars (60-mm.) and eventually platoon mortars (47-mm.).—To destroy the stubborn automatic weapons whose deadly fire is unquenchable owing to a deep furrow that protects it from machine-gun or rifle fire of flat trajectory.

(f) Finally the rifle grenade.—Used to fire shell or smoke only when the riflemen are about to close with the bayonet. Also hand grenades for street or woods fighting and close encounters.

The author concludes with the declaration that vertical fire has reestablished the long lost equilibrium between the attack in the open and the defense under cover. The mortar dominates the automatic weapon.

(9) ORGANISATION ET DIRECTION DES EXERCICES AVEC TROUPES. [Organization and direction of troop field exercises.] Lieut. Colonel Hurst

This is an excellent treatise on methods of presenting simple tactical problems. The subject is well arranged along the following outline:

- (a) Simplicity, realism, precision.
- (b) The objective or result desired.
- (c) Keeping exercise within limit of time available.
- (d) Preparation—reconnaissance of terrain.
- (e) Creating for the unit the picture or situation visualized by the director.
- (f) Simple themes or missions.
- (g) Clear understanding of situation, positions, mission.
- (h) The mission given should be limited to a statement of what the unit as a whole is to accomplish, leaving subordinate missions to be worked out by the leaders responsible therefor.
- (i) Repetition when errors are made.
- (j) Arbitrary determination of fires and fire superiority.
- (k) The critique.
- (l) Later re-discussion of lessons learned in previous exercise.

The author recommends that more time be devoted in military schools to training officers in teaching methods, so indispensable for satisfactory results in their later service.

(10) PHYSIONOMIE D'UNE PÉRIODE DE RÉSERVISTES. [Aspect of a period of reserve active-duty training.] Lieutenant Carrère

The author gives his ideas on active-duty training of reserves based on three periods of duty with reservists.

(11) ITALIE: LE 75^E RÉGIMENT D'INFANTERIE ITALIENNE À BLIGNY (14-19 JUILLET 1918). [The 75th Infantry (Italian) at Bligny, 14-18 July, 1918.] (Extract from article in "Rassegne Italia," July, 1934, by General F. Perronne di San Martino)

On the night of 14-15 July, 1918, the Battle of the Ardre (Marne) began. Orders to evacuate the forward line could not be carried out owing to the intensity of the German fire. At 5:40 AM the enemy advanced. In describing the three-day action that ensued, the author relates vividly the rapid changes in the situation and the measures taken to counter the enemy. Modestly told, it nevertheless portrays a fine example of battle leadership. In their heroic defense and contribution to the Allied victory, the 75th suffered 20 casualties among the officers and 246 among the ranks.

(12) ALLEMAGNE: COMMENT DRESSER LA TROUPE AUX ACTIONS DE NUIT. [Germany: How to train troops for night operations.]

(13) ALLEMAGNE: IDÉES ALLEMANDES SUR UNE RÉORGANISATION DU BATAILLON EN VUE DU COMBAT RAPPROCHÉ. [German ideas on reorganization of the battalion for close combat.]

March 1935

("Revue d'Infanterie" for March 1935 is dedicated in its entirety to Morocco and the Moroccan campaigns.)

(14) LYAUTEY. Brief biography by Marshal d'Esperey
Hubert Lyautey, Marshal of France, First Resident General Commissioner of the French Republic to Morocco, and Commander-in-Chief,

was the first French official to wield full power in French Morocco. His work in Morocco began in 1912. When it ended a few years ago his successors continued his policies which have brought about the pacification of this colonial empire. To him must be credited in large measure the success of the French arms and diplomacy in Africa. His military methods were characterized by a broad point of view, continuity of action, flexibility of execution, constant adaptation of the means available to the successive objectives, and the maximum effort in each phase. His personality, sagacity, and exemplar activity dominated his subordinates and collaborators and won from them unceasing labor along the lines that he had established. His masterpiece speaks for him, an empire covering 500,000 square kilometers, six hours distant by airplane from the French coast.

(15) EN RELISANT BUGEAUD ET LYAUTEY: RÉFLEXIONS SUR LES CAMPAGNES AFRICAINES. [Rereading Bugeaud and Lyautey: Reflections on the African campaigns.] Lieut. Colonel de Monsabert

Lichtemberger said, "Algeria is the work of Bugeaud, as Morocco is that of Lyautey." Bugeaud proclaimed, "The war in Algeria can have but one objective—colonization. It is necessary to find something vital and productive. The fertilization of the country is one of the primary colonial necessities. We shall build villages." This policy was carried out. Later he said to his soldiers, "You have conquered the Arabs, but to make them flee is nothing; they must be subjected."

Lyautey profited by the experiences of Bugeaud. Although the two individuals were exact opposites, their methods differed only slightly. Lyautey said, "The natives must not be treated as the vanquished, as inferiors, but rather raised to our level—associates in the work we are doing in their country."

Both sought the submission of the country and its people. How this was achieved is related in the article by Lieut. Colonel Monsabert.

(16) LES ÉTAPES DE LA PACIFICATION AU MAROC. [Phases of the Moroccan pacification.] Lieut. Colonel Claveau

On 5 August, 1907, the cruiser "Galilee" dropped anchor at Casa-blanca. The commander of the debarking company was wounded in the assault of the port. The same year the forces of General Lyautey occupied Oudjda and Beni Snassen. On 18 March, 1934, at Bou Izakaren, after a three-weeks' campaign conducted by General Hure, the resident commissioner general reviewed the troops that had just subjected the last of the disaffected tribes. This article traces the military operations over the 27 years of fighting in Morocco, dividing the struggle into four periods:

(a) The first campaigns before the establishment of the protectorate.

(b) The second period, entirely dominated by the name of Marshal Lyautey, from 1912 to 1925.

(c) The Riffian War and subsequent reduction of operations until 1930.

(d) The recent and final vigorous effort from 1931 to 1934.

(17) LE SERVICE DES AFFAIRES INDIGÈNES AU MAROC. [The Moroccan Bureau of Native Affairs.] Captain Goudard

Every colonial enterprise brings to the fore the problem of contact between two races and two different peoples. In Morocco the task of handling native questions is confided to the "Service des Affaires Indigènes," which is composed of army officers. These have a triple role to perform: military, political, and administrative—much the same as the service of the U.S. officers in the Philippines during the years immediately following the Spanish-American War.

(18) TROIS HÉROS: CAPITAINE LAFFITTE, CAPITAINE DE BOURNAZEL, LE SOUS-LIEUTENANT POL LAPEYRE. [Three heroes.]

(19) LE PROBLÈME INDIGÈNE AU MAROC. [The native problem in Morocco.] Captain de la Chapelle

The native population of Morocco is composed chiefly of Berbers, with Arabs, Moors, and Jews also present in large numbers. Nationalistic sentiment is rife in many sections. In the south the tribes are hostile. To preserve peace constant tactful arbitration and assiduous surveillance are

necessary. The interesting study presented by Captain de la Chapelle tells the story of the racial development of Morocco and discusses the problems imposed by heterogeneous character of the country and its people.

REVUE DU GENIE MILITAIRE (France)

By Lieut. Colonel P.C. Bullard, Corps of Engineers

January-February 1935

(1) **TRAVAUX DE RELEVAGE D'UNE LOCOMOTIVE DÉRAILLÉE SUR LE RÉSEAU DE L'ÉTAT.** [Rerailing a derailed locomotive on the State railway system.] Captain Beauvais

(2) **ENQUÊTE SUR LA RADIESTHÉSIE. COUPS DE BAGUETTE.** [Inquiry into radiesthesia. Strokes of a wand.] Lieut. Colonel du Tersent (See No. 3 below.)

(3) **LA RADIESTHÉSIE APPLIQUÉE AUX BESOINS MILITAIRES.** [Radiesthesia, or the art of the well-finder, as applied to military needs.] Viré

The two articles last listed treat of the curious art of the well-finder. For hundreds and thousands of years, records show, various types of divining-rods and pendulums have been used to locate underground water, minerals, caverns, and the like, with mysterious success.

Viewed either with disdainful disbelief or treated with hostile suspicion, the experiments and practices of well-finders have only recently been studied in a sympathetic attitude by science, which now finds in them a real contribution to the progress of mankind. Though explanations of the causes are still unsatisfactory, it is established that, by means of a wand of an almond or hazel tree, or a very simple arrangement of two pieces of whalebone tied together by a string, such divining-rod being held lightly in the hand, the rod moves in characteristic manner when the person holding it walks across ground which contains some body (such as water or mineral, or an air cavity) which is different from the remainder of the mass of the earth. Similar results are obtained by using a simple pendulum, such as a rubber ball on a string. Practice makes it possible to draw more or less accurate conclusions as to the nature of the foreign body and as to its depth in the earth.

In the World War such methods were used to some extent in locating water, underground caverns, etc., which were later used as deep shelters, and for other similar purposes. Present studies indicate wider application for military use.

Most, but not all persons, are probably capable of operating such divining-rods.

(The reviewer has personally located water with a forked switch from a peach tree.)

REVUE MILITAIRE FRANCAISE (France)

By Captain M.D. Taylor, Field Artillery

January 1935

(1) **ALEXANDRE IER CHEF D'ARMÉES.** [Alexander I of Yugoslavia as a military leader.] Lieut. Colonel Tournyol du Clos

While history will remember Alexander primarily as the founder of Yugoslavia, it will also record him as a great soldier. In the Balkan campaigns of 1912 and 1913 he commanded the Serbian First Army and gained the brilliant victories of Koumanovo, Babouna, Monastir, and Brégalnitsa. In 1914, as prince regent and commander-in-chief of the Serbian armies, he twice repulsed the invaders at the Tsér and at the Koloubara. In 1915, after an epic struggle against the Austrians, Germans, and Bulgarians, he managed to withdraw his forces through the paths of the Albanian Alps to Salonica, where he joined forces with the Allies. In 1916, he led his Serbians in an offensive to the heights of the Dobropolié and the Sokol. Finally, from 15 September to 11 November, 1918, Alexander at the head

of his armies pursued the enemy through the entire length of Serbia and advanced 65 miles into the valley of the Danube. Of his many military successes, the victory of the Koloubara is a fair example.

On 6 November, 1914, the Austrian Fifth and Sixth Armies (13 divisions) resumed the offensive against the Serbian position extending from Chabats south along the Drina River. To hold this line the Serbians had about 12 infantry and one cavalry division divided into the First, Second, Third, and Ougitsé armies. The attack was not a surprise. Alexander, whose material means were distinctly limited, countered by a decision to delay in successive positions. By 1 December the Serbians had withdrawn to the line: Varovnitza—Sibnitsa—Drenova, an average distance of about 65 miles from their positions of 6 November. In the course of the retirement, two intermediate positions had been occupied and defended.

The Austrians had followed up energetically, but their troops were tired. On 1 and 2 December, the Austrian Fifth Army, having lost contact, began to side-slip to the north in the direction of Belgrade in order to envelop the Serbian right flank. Alexander perceived the movement and, with little or no preparation, ordered a counteroffensive. It went off on 4 December and surprised the Austrians. By 9 December the battle was won and the pursuit begun. By 15 December, the Austrians were driven back across the Save. The Serbians had captured over 40,000 prisoners and large military stores. It was the Serbian Battle of the Marne.

(2) GUERRE D'HIER ET DE DEMAIN. [Warfare past and present.] General Pichon

Effective command can be exercised only if the leader (a) receives timely information to use as a basis for decisions, (b) has agencies capable of executing his decisions, and (c) has means of transmitting his orders to these agencies. These conditions have existed from the remote past, but the manner of realizing them changes with time. the methods of the past no longer satisfy the exigencies of the present.

During the War, the command of a division deployed over a front of 2,000-4,000 yards, could be and was rigidly centralized. Subordinates were trained not to act on their own initiative but to report events and await orders. Operations moved slowly and only after detailed preparations.

In the war of tomorrow these methods will not suffice. Increased fire-power will allow greatly extended frontages. Motorization will speed up troop movements, which is to say, capacity of maneuver. Maneuver will be the dominant characteristic of this new war in all echelons which will act first and then report. Certainly the means of exercising a command on a 2,000 yard front will no longer suffice. Decentralization is the only answer.

The increased rate of displacement of motorized and mechanized elements on the battlefield emphasizes the importance of prompt and rapid transmission of information. If a motorized enemy is reported at X at 9:00 AM, it may be 15 miles from X at 10:00 AM, at which hour the 9 o'clock information is "cold." Only electrical means of transmission of information will be adequate in rapidly moving situations.

As the telephone is still the most satisfactory electrical means, leaders in the next war must study the line-route map with the same attention as the topographical map. Command posts, advanced message centers, and march objectives must be chosen with a view to utilizing the existing centrals.

As previously indicated, decentralization will characterize the exercise of command in the next war. This tendency will result in the splitting up of the division into tactical teams. The division commander on the wide front of his division will influence the action not by the maneuver of fire but by the movement of mobile reserves held out in a central location until the decisive moment. The organization of the tactical teams of a division will vary with the mission assigned. One or two battalions of infantry, some machine guns, some antitank weapons, some field artillery—such might be the composition of one of these teams. No attempt should

be made to give them detailed orders. The mission type of order is best adapted to this modern war of movement.

The present division does not have the headquarters personnel needed to control a group of tactical teams. A lieutenant colonel reporting to command such a team with only a stenographer and an orderly is physically incapable of exercising command. He needs a staff and communication facilities. Where to obtain them? Perhaps it would be well to have within the organization of the division headquarters a number of command "cells" which could be detached at will to tactical teams. Not only would these cells furnish adequate command facilities to the tactical teams, but their officers, coming directly from division headquarters, would be sure to have the ideas and plans of the division commander thoroughly in mind. They would thus be the perfect type of liaison officer for a subordinate unit. The following is a possible organization of a command "cell":

- 1 general staff officer
- 3 radio sets to work to the front, to the rear, and with the air.
- Necessary radio personnel
- 2 telephones with operating personnel
- 3 stenographers (enlisted men)
- 3 motorcycle liaison agents
- 1 switchboard
- 2 automobiles to transport men and equipment.

Regulations place the responsibility for signal communications squarely up to the commanding officer. The latter should give as much thought to his plan of signal communications as to his plan for the employment of the artillery or for the organization of the ground. Good communications can not be improvised. The plan of signal communications must be developed step by step with the tactical plan and not as a delayed afterthought. The successful commander must understand the advantages and limitations of all his signal agencies.

In a war of maneuver, time is everything. He who learns first, and dispatches the timely order which sets in motion the most rapid and effective maneuver will emerge the victor. This study attempts to emphasize the importance of the minutes gained by the proper use of the telephone, the judicious selection of the command post, or the timely decentralization of command. The results, small in themselves, may in the end be of capital importance.

(3) L'ACHÈVEMENT DE LA PACIFICATION MAROCAINE. MÉTHODES ET PROGRAMMES. [End of the pacification of Morocco. Methods and programs.]
Lieut. Colonel Juin

A summary of the final stages of the Moroccan pacification.

February 1935

- (4) LES JOURNÉES DES 29 ET 30 AOÛT 1914. [29-30 August, 1914.]
(1) Colonel Menu

This article is a description of a few of the local combats which went to make up the totality of the counterattack of the French Fifth Army against the German Second Army (battle of Guise). The French units involved are the 19th and 20th Divisions composing the X Corps.

In the regroupment of the Fifth Army for the counterattack, the X Corps was directed to occupy a sector of the defensive front between Audigny and le Sourd and to push a strong detachment on Guise. On 27 August the corps was in the area: Origny—Bucilly—Plomion. On 28 August it reached the area: la Vallée aux Bleds—Marfontaine—Cambron—Fontaine, divisions in column, the 20th Division leading. March orders for 29 August directed the X Corps to march north and northwest to its final position on the line to be occupied during the counterattack: Audigny—Colonfay—Le Sourd. These orders reached divisions between midnight and 1:00 AM, regiments between 2:00 AM and 6:00 AM. The march was initiated by regimental columns with little or no centralized contact.

There was a heavy fog which obscured everything beyond 50 yards. This fog did not begin to lift until about 8:30 AM.

Moving to their march objectives, the columns of the X Corps collided in the fog with units of the German X and Guard Corps which had crossed the Oise and were continuing their advance to the south. Both sides were equally surprised. A series of local and semi-independent combats ensued. Formed columns coming unexpectedly upon deployed infantry and artillery were decimated. Many French units were seized with panic and retired in great confusion to the south. No coordinated action of the large units was possible. Such successes as were obtained were due to the initiative of battalion and regimental commanders. The artillery was presented with many splendid targets of opportunity. Within six hours the left of the German X Corps and the 1st Guard Division drove back the French 20th Division and two reserve brigades a distance of $3\frac{1}{2}$ miles. The French units were badly disorganized.

By about 11:00 AM, a state of equilibrium had been reached on the front between the Oise on the west and Richaumont on the east. But farther to the east a grave danger threatened the Fifth Army. A German force of eighteen battalions supported by eighteen batteries was in the area: Le Sourd—Voulpaix, ready to fall on the right flank of the X Corps. At 10:40 AM, General Defforges, commanding the X Corps, called on the Fifth Army for assistance to protect the right of his corps. At 11:00 AM, Lanrezac directed the 4th Cavalry Division, then in the Fontaine les Vervins area, to attack in flank the troops threatening the right of the X Corps. At 11:45, General von Plettenberg commanding these troops (the Guard Corps) ordered them to continue their advance.

The 4th Cavalry Division, not being relieved of its previous mission of covering the flank of the army from attack from the north and northeast, was not able to intervene with all its strength to assist the X Corps. Instead, it limited its support to artillery fire which fell with great surprise effect on the advancing 2d Guard Division. This unit, in a position to play a decisive part in the battle, stopped and remained in place for six hours. By dark an additional French infantry division (Boutegourd) arrived to render secure the flank of the X Corps.

During the night the Fifth Army prepared its offensive return. By an order dated 11:00 PM, the army commander ordered the III, I, and X Corps to attack to the north while the XVIII Corps and the group of reserve divisions protected the left flank of the army along the Oise. On the front of the X Corps, the attack went off at dawn but made little progress. At 7:00 AM an order from G.H.Q. dated 10:00 PM of the preceding day reached the army, calling off the counterattack. The troops of the X Corps received the order between 9:00 and 10:00 AM. The attack was halted and a daylight withdrawal began. It was not until 3:00 PM that the Guard Corps commander learned that the French had retired.

Bulow, impressed by the reaction of the Fifth Army, considered that immediate pursuit was out of the question. The Second Army halted for a rest of 36 hours. In the First Army, Kluck, learning on 30 August that his neighbor was still halted on the Oise, violated the German General Headquarters directive and obliques toward the Oise. This decision set the stage for the battle of the Marne.

(5) L'OPÉRATION DE SARYKAMYCH. [The Sarykamych operation.] (I) General Inostransev (See abstract, page 88.)

(6) UNE FIGURE DE SOLDAT. VON LETTOW VORBECK. [Portrait of a soldier. Von Lettow-Vorbeck.] Colonel Charbonneau

A French tribute to the feats of v.Lettow Vorbeck in German East Africa during the World War.

March 1935

(7) LES JOURNÉES DES 29 ET 30 AOÛT 1914. [29-30 August, 1914.] (II) Colonel Menu (See No. 4—in February issue, preceding.)

(8) L'OPÉRATION DE SARYKAMYCH. [The Sarykamych operation.] (II) General Inostransev (See abstract, page 83.)

(9) LA DÉFENSE DE SÉLESTAT EN 1814. [The defense of Sélestat in 1814.] General Schweisguth

(10) ETUDE SUR LE LIVRE DU PROFESSEUR KIRITZESCO: LA ROUMANIE DANS LA GUERRE MONDIALE DE 1916 À 1918. [A review of Professor Kiritzesco's book, "Rumania in the World War."] Lieut. Colonel Delmas

REVUE MILITAIRE SUISSE (Switzerland)

By Major F. Düring, Infantry

January 1935

(1) LE SERVICE D'ORDRE MILITAIRE. [Military aid to the civil power.]

(I) Colonel Sonderegger

The author believes that the incidents that occurred during the riots in Geneva on 9 November, 1932, when Swiss troops were called upon to play a humiliating part, were injurious to the reputation of the army, both at home and abroad.

Duty in aid of the civil power is the second mission allotted to the Swiss army by the Constitution. Troops are called upon to take action when a mob tries to carry out an illegal act by force.

An improvised force should not be used for such a purpose, but regular troops only.

Although the regulations lay down that troops should form a reserve to the police force, the writer thinks that such a rule is unfortunate. Troops are not trained in police duties, and should act in their military capacity, and with their normal weapons. Hydrants may be used by the police, but should not be used by troops. A soaking will merely exasperate an angry mob. Firing with blank cartridge and firing over the heads of the rioters is forbidden.

(2) CONDITIONS DU SERVICE À COURT TERME. [Duration of military service.] General Rouquerol

General Rouquerol is in favor of long service; i.e., a minimum of two years, as opposed to short service that has a maximum of one year. It is essential that the army should be thoroughly trained for its duties when war breaks out. It is true that the British were able to increase their army from seven divisions in August, 1914, to sixty divisions on the West Front two years later, but this was only possible because France was better prepared than her allies when the war broke out.

General Brialmont had proposed additional works in the gap between the Liège forts and the Dutch frontier, but budget requirements compelled him to forego the construction of these works, and it was through this gap that the German cavalry was able to force its way on 2 August, 1914. This instance is quoted as an example of the necessity for thorough preparation in peacetime.

February-March 1935

(3) LE SERVICE D'ORDRE MILITAIRE. [Military aid to the civil power.]

(II) Colonel Sonderegger

Colonel Sonderegger concludes the article that was begun in the last number, relating to the riots in Geneva of November, 1932. The Federal Military Department, having ordered an inquiry, decided that the officers and men were justified in the action they had taken.

The writer considers that the rules on the subject of troops called out in aid of the civil power should be more explicit. Troops should not wait till the trouble begins, but should leave their barracks with bayonets fixed and rifles loaded. Officers should carry swords as well as pistols, but should not fire before the men do. Heavy machine guns should accompany the troops.

The question of the use of fire or the bayonet will depend upon circumstances and the numbers available. Troops should not charge with the bayonet unless they can take up the whole width of the space occupied by the mob; and, when in line, they should always be in double rank.

Various other points of importance are noted.

(4) LES ARMES LOURDES D'INFANTERIE. [The heavy infantry company.] Major Perret

In course of time every Swiss battalion will have a special company ("compagnie d'armes lourdes") consisting of the following:

- 1 section of 2 antitank guns
- 1 section of 4 antiaircraft machine guns
- 2 sections of 2 mortars ("lance-mines") each
- 1 ammunition section.

The antitank gun has a caliber of 47-mm., and the rate of fire is 15 to 20 rounds a minute.

The mortar is a French pattern Stokes-Brandt mortar, with modified ammunition. It will fire the ordinary projectile with seven different charges up to 3,000 yards, and a "mine" shell with four charges up to 1,200 yards.

The method of using these weapons is fully described.

(5) VINGT ANS APRÈS! [Twenty years after.] Major Masson

This article begins with a brief summary of the rearmament, since the World War, of Switzerland's neighbors. Germany, ignoring her obligations under the Versailles treaty, can now count upon a Reichswehr with an effective strength of 600,000 men, and has 4,000 air pilots, together with a vast quantity of air material. France finds herself in an awkward situation owing to the big drop in available effectives between 1936 and 1940 (owing to the fall in the birth-rate between 1914 and 1918), and is obliged to revert to two years with the colors. Italy has become intensely militarized under the Fascist régime, and even Great Britain has recognized that her frontier is on the Rhine.

Compared with the above, the Swiss army has made little progress in the 20 years since the war. The automatic rifle was not introduced till 1926; i.e., 12 years after it appeared on the battlefield. Antitank guns and mortars are not yet part of the regular equipment of the troops. The artillery has no antiaircraft guns, no armored cars have been provided, and no fortified works have been built on the north and northwest frontiers. The air force is short-handed, and very little has been done to train the civil population against gas attacks.

RIVISTA DI ARTIGLIERIA E GENIO (Italy)

By Major F. During, Infantry

December 1934

(1) ALCUNI PROBLEMI D'ARTIGLIERIA. [Artillery problems.] Colonel Marras

Colonel Marras discusses a number of artillery problems. The conclusions he arrives at are that the new infantry weapons and their development have not in any way diminished the part that artillery will take in battle. As far as we can foresee, artillery will, in a future war, encounter greater difficulties than ever in carrying out its duties.

(2) OCCULTAMENTO E MASCHERAMENTO. [Concealment and camouflage.] Lieutenant Contadini

In this article Lieutenant Contadini deals with the question of concealment and camouflage on the field of battle. In the introduction he explains their object both in defense and attack. The rest of his article is subdivided into three parts: (a) the characteristics of different objects, (b) materials and methods, (c) camouflage on the battlefield. An appendix explains the practical application of color to screening materials.

In the first part the writer deals with the study and reproduction of form, with its relief effects and shadows, and with colors, their classification and properties. It is possible, with photographic plates sensitive to infrared rays, to photograph distant objects concealed by mist and invisible to the naked eye. Mineral colors, used for camouflage purposes, will show up strongly if photographed with such plates. Colors with a vegetable base will not show up in the same way.

With regard to materials, if growing trees or shrubs are not available in the right spot, they may either be transplanted or cut; grass sods may be used, or grass seed sown. Various artificial materials may be used; viz., string netting, raffia, hessian or coarse cloth, cork, asbestos (where there is risk of fire) and "truciolo" (i.e., fine shavings of willow or poplar). Supports for the screens may be ordinary wooden pickets or small steel pipes. A description is given of the method of making netting and hoods for concealing personnel.

In the third part the writer deals with the concealment of wire entanglements, trenches, machine-gun and gun positions. What gives away the site of a gun position more than anything are the wheel tracks leading up to it. It is best to make the tracks lead up to a false position, and then to carry them under cover to the correct one.

The appendix gives a detailed list of colors and the method of applying them, also a list of materials suitable for a camouflaging unit in the field.

(3) GUERRA DI MINE. [Mine warfare.] Major Tosti

January 1935

(4) SCIENZA E INDUSTRIA PER LA PREPARAZIONE MILITARE DEL PAESE. GLI AGGRESSIVI CHIMICI. [Chemical warfare.] Major Mameli

The author deals with the relationship between chemical research, chemical industry in peacetime, and chemical industry in time of war. It was due to the close relationship between chemical research and industry in Germany that that country had, at the beginning of the war, an overwhelming advantage in the supply of chemical products over every other country in the world.

Chemical warfare began in 1915 with the use of chlorine, which is mainly obtained in the manufacture of caustic soda by the electrolytic method. At the end of that year phosgene (or carbonyl chloride) came into use. Yperite (mustard gas) has been known since 1822, but it was never prepared industrially until the Germans made use of it in 1917. Beside the above, the arsine compounds, with their irritant and sternutary effects, came into use in 1917 and 1918.

Chemical warfare was introduced on a large scale, for the first time, on 22 April, 1915, against the British and French trenches, causing effects that baffle description. Fortunately, in spite of the heavy casualties, the Germans failed to take advantage of the situation.

On entering the War, the Italians omitted to profit by the experience of the Allies, and allowed themselves to be surprised by an Austrian gas attack on the Carso in 1916. Here, too, the tactical result was negligible, although the Italian casualties were very heavy.

Germany turned out 100,000 tons of chemicals. France and Great Britain were only able to turn out 50,000 each, and Italy only 13,000. Germany's peacetime output of 40 tons of chlorine in a year was increased to 60 tons a day.

The experience gained in the World War points to the necessity for developing chemical industries and for training troops in chemical warfare.

(5) L'IMPIEGO DELLA LUCE COME MEZZO DI OFFESA. [Light as an offensive weapon.] Lieut. Colonel Gatta

Investigations are being made in France into the use of light as a means of offense, and the question has also been taken up in the daily press. The writer describes the structure of the eye, and the rays that affect it injuriously. The eye can be irritated by visible rays, either by flashes of intermittent light or by dazzle. Flashes at intervals of 1/30 of a second appear as a continuous light, but rhythmic flashes at longer intervals are exceedingly disturbing to the eyesight.

Light emanating from a gaseous source, such as that of a mercury vapor lamp emits rays with a non-continuous spectrum, and does not irritate the eye; whereas light emanating from a solid body, such as that of electric arc or incandescent lamps, that emit rays with a continuous spectrum, can be irritating to the eye. But for practical work in the field the writer considers that the substances used in firework manufacture

are most suitable, both on the ground of efficiency and economy. A shower of rockets bursting round an aeroplane would dazzle the pilot to such an extent that he would lose his sense of direction altogether.

February 1935

- (6) RETICOLATI ELETTRIFICATI. [Electrifying wire.] Ma'ior Montanari
- (7) LA DIVESA DEL PASUBIO E DEL CORNO BATTISTI. [The defense of the Pasubio.] General Ferrario

The Pasubio "massif," standing on the former boundary between Austria and Italy at the southern end of the Trentino, was a very important point for the Italian First Army. It commanded the passes of Val-larsa and Borcola, over which roads ran from Rovereto in the Adige valley to the plains of Vicenza. An advance along either of these roads would have threatened the Italian rear, but it did not at first form part of the Austrian plan of campaign. The Italians were consequently able to seize the Pasubio early in the War.

General Ferrario gives a detailed account of the defense of the Pasubio from May, 1916, when the Austrian offensive began, up to the end of the War. The narrative is illustrated with eleven photographs and four maps. The troops who took part in the defense had to undergo the most terrible hardships and discomforts; mining and countermining went on the whole time. The cold in the winter was intense and losses were very heavy, but the position was held throughout.

ROYAL AIR FORCE QUARTERLY (Great Britain)

July 1935

- (1) "RANGE IS MORE TO STRATEGY THAN FORCE"
- (2) AN INTERNATIONAL AIR POLICE FORCE. Squadron-Leader Fulljames
- (3) AIR POWER AND SECURITY. By "Squadron Leader"
- (4) FRENCH AIR EQUIPMENT PROGRAMME
- (5) SOME ASPECTS OF NATIONAL AIR DEFENCE. By "Squadron Leader"
- (6) GUN-ENGINE, LIGHT TWIN-GUN OR HEAVY MULTI-TUBE. Lieutenant Barjot
- (7) LEAVES FROM A PILOT'S FLYING LOG-BOOK. Wing-Commander Miles
- (8) THE ROYAL CANADIAN AIR FORCE. THE EARLY DEVELOPMENT OF SERVICE AVIATION IN CANADA, AND AN ACCOUNT OF CANADA'S CONTRIBUTION IN THE WORLD WAR
- (9) HISTORY OF THE ROYAL AUSTRALIAN AIR FORCE. Wing-Com-mander Wrigley

ROYAL ARMY SERVICE CORPS QUARTERLY (Great Britain)

May 1935

- (1) R.A.S.C. TRAINING, 1935
- (2) A NOTE ON THE TREND OF R.A.S.C. ORGANIZATION IN THE FIELD
- (3) THE IMPRESSMENT OF M.T. VEHICLES ON MOBILIZATION
- (4) MODERN MILITARY DISCIPLINE
- (5) FURTHER NOTES ON THE PROTECTION OF M.T. FROM AIR ATTACK
- (6) THE PROVISION OF THE INITIAL STOCKS OF M.T. SPARE PARTS FOR R.A.S.C. COMPANIES IN THE OPENING STAGES OF A CAMPAIGN
- (7) CONSIDERATIONS ON THE TYPES OF CARS AND MOTOR-CYCLES SUITABLE FOR R.A.S.C. WORK IN WAR
- (8) NOTES ON THE PROTECTION OF M.T. IN DESERT WARFARE

ROYAL ENGINEERS JOURNAL (Great Britain)

June 1935

- (1) THE GEBEL AULIA DAM. Captain Francis
- (2) WATER SUPPLY IN A DESERT COUNTRY. (Cooper's Hill War Memorial Prize Essay, 1935) Lieutenant Drayson

- (3) THE BRITISH TRANS-GREENLAND EXPEDITION, 1934. Lieutenant Godfrey
(4) ENGINEER INTELLIGENCE FROM PHOTOGRAPHS. Lieut. Colonel King
(5) THE R.E. PROBLEM OF THE TANK BRIGADE. Major Fowle
(6) WOOLWICH TATTOO, 1934. Major Baker
(7) ENGINEER OPERATIONS, SOUTH PERSIA, 1914-19. Colonel Molesworth
(8) A CONSIDERATION OF DEMOLITION METHODS—ESPECIALLY AS APPLIED TO POWER PLANT—WHICH COULD BE ADOPTED BY A MOBILE STRIKING FORCE. Captain Blagden
(9) SMALL GENERATING AND WATER-SUPPLY PLANT—EFFICIENCY LAY-OUT AND CONTROL. Captain McDonald
(10) TECHNICAL TRAINING OF FIELD COMPANY N.C.O's. Captain McMeekan

ROYAL TANK CORPS JOURNAL (Great Britain)

June 1935

- (1) ARMoured TRACTION TRAINS, 1898-1902. Major-General Fuller

July 1935

- (2) THE GERMAN TANK ATTACK, APRIL 24TH, 1918. Major-General Fuller

SANCT CHRISTOPHORUS (Germany)

By Major G.B. Guenther, Cavalry

January 1935

- (1) MOTORISIERUNGSPLÄNE IN FREMDEN HEEREN. [Motorization plans in foreign armies.]

Recent press reports indicate renewed activity in experimentation with armored mechanized fighting machines. The two types receiving the most attention are the light fast and the amphibian tanks. Efforts are being made in all experimental fields to select types and designs that will serve the essential purposes and at the same time be capable of mass production at economical prices. The automotive concerns have been contacted by military engineers with a view to standardizing so as to eliminate a too varied type of assembly parts.

The French principle that the mechanized force is a vital element for employment at a critical point to force a decision has been proved to be sound in a series of army maneuvers. France will have the greatest number of mechanized vehicles of all nations at the completion of her present program for increasing the army. The project includes the motorization of six cavalry divisions, all of which are to be stationed on the French eastern border. One of her big problems is to provide a future fuel substitute for gasoline or a sufficient gas reserve, because France is largely dependent on imports for her supply. The motorization of the entire general reserve artillery, the major portion of the division artillery, and one-sixth of the light artillery is rapidly nearing completion.

England has made provision for the organization of another mechanized brigade and contemplates making tank brigades organic parts of the infantry divisions. Extensive changes in the motorizing of all transport are in progress. A new type of low animal and personnel carrier is being developed which has great cross-country ability and a high road speed.

In the case of many tank and armored car types, Japan has adopted foreign models. Due to the shortage of animals within the empire she welcomes the use of motors and has substituted them wherever she can. One regiment of each infantry division is to be motorized. This motorized regiment is composed of four to five infantry companies, one light artillery battery, a light tank company, an antitank company, an armored car company, and a reconnaissance and gas detachment. The reconnaissance

detachment is composed chiefly of cavalry for reconnaissance, operations against flanks and in case of a retirement to be utilized with the rear guard. This new organization is the result of actual tests made during the Chinese operations. The organization of a mechanized brigade, so called "Storm Brigade," to be composed of three to four battalions of light and heavy tanks, artillery with self-propelled mounts and to include motorized reconnaissance, pioneer and supply units, has been completed. Japan having had the most recent actual field experience has as a result made changes in many of her organizations which she now considers suitable for future operations.

February and March 1935

- (2) DAS GEFECHT "KAMPFWAGEN GEGEN KAMPFWAGEN." [The combat of tanks versus tanks.] (See abstract, page 62.)

SIGNAL CORPS BULLETIN

March-April 1935

- (1) WIDE BAND TRANSMISSION OVER COAXIAL LINES. Espenschied & Strieby
(2) BATTERY LINES OF COMMUNICATION. 1st Lieutenant Olmstead
(3) AN ICONOCLASTIC SCHEME OF PROMOTION FOR ENLISTED MEN OF THE SIGNAL CORPS. Captain Teague

May-June 1935

- (4) THE FIFTY-FIRST SIGNAL BATTALION. Major Ingles
(5) THE OPERATION OF THE WAR DEPARTMENT RADIO NET. Captain Townsend
(6) NOTES ON COMMERCIAL RADIO INSTALLATIONS. First Lieutenant Pachynski
(7) LIGHT POLE LINE CONSTRUCTION. First Lieutenant Keane
(8) BOMBARDMENT AVIATION AND ITS RELATION TO ANTI-AIRCRAFT DEFENSE. Major Dargue

July-August 1935

- (9) THE CORPS AREA SIGNAL OFFICER. Major General Allison
(10) MODERN METEOROLOGY. Lieutenant Wenstrom
(11) DOTS AND DASHES. Markey
(12) TEACHING THE SOLDIER. Lieutenant Lyman
(13) WAMCATS MECHANIZE. Captain Edwards

WEHR UND WAFFEN (Germany)

By Major F. Doring, Infantry

January 1935

- (1) UBER DIE BASIS BEI RICHTUNGSHÖRERN. [The base in sound ranging.] Dr. v.Hofe & Dr. Raaber

- (2) FRIEDENSAUSBILDUNG—KRIEGSERFAHRUNG. [Peace training and war experience.] (III) Lieut.-General Marx, Retired

General Marx continues his war experiences as a battery commander. In this instalment no examples appear of faulty peace training, but an instructive example is given of an artillery brigade taking up position with the batteries in line along the edge of, but within, a wood. This surprising situation was made possible by the work of a half-company of engineers and an infantry battalion, which felled enough trees to provide a one-way road through the wood on one flank, along the position, and back through the wood from the other flank. The men spoke of this adventure ever after as "The merry-go-round at Nouillon."

There is the usual crop of good stories, for instance, of the French cavalry patrol (shining helmets, red breeches and all) which surprised and was surprised by a German artillery reconnoitering party, how they stared at each other through their field-glasses, while not a sound was heard

except the occasional champing of a bit, until both sides decided to melt away, which was done with a cheery wave and to mutual relief.

(3) NEUE KONSTRUKTIVE GEDANKEN ZUR VERBESSERUNG DER FAHREIGENSCHAFTEN VON KRAFTWAGEN. [New constructional ideas for improving the driving properties of motor vehicles.] Dr. Rohne

(4) KRANKENABSCHUBMITTEL IM KRIEGE. [Evacuation of wounded.] Dr. Adam

(5) BEI DER 5. ENGLISCHEN ARMEE AUSGEFÜHRTE SPERREN UND ZERSTÖRUNGEN WÄHREND DER FRÜHJAHRSSCHLACHT 21.—27. 3. 18. [Strategic demolitions by the British Fifth Army during the battle 21-27 March, 1918.] (III) Colonel Wabnitz, Retired

(6) DIE ARTILLERIE DES ALPENKORPS IN DER DURCHBRUCHSSCHLACHT VON TOLMEIN AM 24. OKT. 1917. [The artillery of the Alpine Corps in the breakthrough battle of Tolmein.] (I) Lieut. Colonel Stuhlmann

Colonel Stuhlmann states here very clearly the origin of one of the greatest victories in the history of war. He says that the effect of the Isonzo battles, especially of the eleventh in August, 1917, was to make the Austrians feel that they would lose the whole river front if the Italians attacked again. There was nothing for it but a great counteroffensive, and this would only be possible if the Germans helped. The German Fourteenth Army was sent under von Below, and had allotted to it the main attack west of Tolmein. It carried out the attack on a front of four divisions. To one of these, the so-called Alpine Corps (Bavarians), fell the most difficult task of capturing Height 1114, the key of the Kolovrat position, which ran parallel to the river. As paving the way to this, the work of the artillery of the Alpine Corps (221 guns, of which 83 were Austrians, and 93 trench mortars) was of the greatest importance, and an account of it is given here under the headings, assembly, organization, sectors, registration, fire orders, and tasks.

February 1935

(7) FRIEDENSAUSBILDUNG—KRIEGSERFAHRUNG. [Peace training and war experience.] (IV) Lieut.-General Marx, Retired

The extraordinary position taken up inside the wood at Nouillon by the half-battery which included the writer's battery was a complete success. Through a long day's fighting never a round was fired at them, and that although their position was so full of danger that they had already been marked as dead. The explanation is twofold: (a) that the muzzles were so far back inside the wood that no flash or smoke betrayed them; (b) that when, in accordance with an old artillery rule, the French gunners in retiring over this country had examined it for possible enemy battery positions, they must have ruled out the wood as impossible. During the fight they saw that there were no German batteries in the clearing, and they located them behind the wood instead of inside it. The mainsprings of this successful maneuver were the genial idea of a one-way road through the wood, the labor that felled the necessary trees, and skilful concealment.

(8) DIE ARTILLERIE DES ALPENKORPS IN DER DURCHBRUCHSSCHLACHT VON TOLMEIN AM 24. OKTOBER 1917. [The artillery of the Alpine Corps in the breakthrough battle of Tolmein.] (II) Lieut. Colonel Stuhlmann

This instalment continues the tasks, records the ammunition provided, and gives a short account of what happened on 24 October, the day of the attack.

(9) ZUR GESCHICHTE DES FERNSPRECHERS. [The history of the telephone.] (I) Lieut. Colonel v. Dufais

(10) DIE KRIEGSVERLUSTE RUSZLANDS 1914-1917. [Russia's war losses, 1914-1917.] Leppa

March 1935

(11) UEBER DIE WEHRTECHNISCHEN GRUNDLAGEN VON FRANKREICHS WEHRKRAFT. [The technical basis of France's armed strength.] Völcker

A clear representation of the extraordinary increase, intensive and extensive, of France's war-power technique during the last few years is

furnished by the recently developed plan of Lieutenant Colonel de Gaulle for a heavily armed and highly mobile professional army of 100,000 men. This proposal, which is quite within the intention of the present War Minister, General Maurin, sees a motorized and mechanized professional army of six-year soldiers immediately behind France's fortress army. The seven divisions of this army, each containing a mechanized brigade and an infantry brigade on cross-country armored vehicles, with special troops and general reserves of very heavy tanks, would be able on the first day of war to penetrate 65 miles into enemy country. It would have three times the fire-power and ten times the speed of a corresponding force in 1914.

As in all that concerns war this matter has a two-fold foundation, material and personal. Professor Völcker thoroughly examines French conditions, industries and products on the one hand, and on the other hand national character and capacities. He comes to a decision that an army of the nature indicated is in France a technical possibility. The proposal is capable of realization.

(12) ZUR GESCHICHTE DES FERNSPRECHERS. [The history of the telephone.] (II) Lieut. Colonel v. Dufais

(13) DIE KRIEGSAKADEMIE DER VEREINIGTEN STAATEN. [The United States Army War College.] By "W"

WISSEN UND WEHR (Germany)

By Major G.B. Guenther, Cavalry

January 1935

(1) GEDANKEN ÜBER KRIEGSGESCHICHTE. [Thoughts concerning military history.] Lieut.-Colonel Lindemann

By referring to historical examples the author discusses various characteristics of warfare such as the value of defensive fires, stabilized warfare, artillery preparation preceding an attack, the importance of distribution in depth, and the cooperation and coordination which should exist between the arms.

(2) DER DEUTSCHE AUFMARSCHPLAN VON 1904 UND BELGIEN. [The German plan of advance in 1904 and the advance through Belgium.] Colonel Schwertfeger

(3) WAFFENTREUE 1918. [Loyalty to arms, 1918.] Leppa

(4) DAS FRANZÖSISCHE KOLONIALREICH. [The French colonial empire.] (I) Lieut.-Colonel Dühring

This is an historical sketch of the development of the French colonial empire including a discussion of the French methods and policies in colonization.

February 1935

(5) BETRACHTUNGEN ÜBER "KOLBERG 1807." [Observations concerning Kolberg, 1807.] Captain Hassenstein

(6) DAS GALLIPOLI-WUNDER ODER DIE SCHLACHT DER VERPASSTEN CHANCEN. [The Gallipoli wonder, or the battle of lost opportunities.] Major Welsch

(7) FRANKREICH'S WEHRGEIST. [The spirit of preparedness in France.] Völcker

(8) DIE BEDEUTUNG DES BERGBAUS FÜR DIE KRIEGSWIRTSCHAFT. [The importance of mining in the conduct of war.] Hoffmann

March 1935

(9) "DIE WEHRMACHT IM NATIONALSOZIALISTISCHEN STAAT." [The military forces in the national-socialistic state.]

(10) DIE LAGE DER MITTELMÄCHTE IM HERBST 1914 UND DER WIRTSCHAFTSKRIEG. [The situation of the Central Powers in the fall of 1914 and the economic war.] Pantlen

The failure of the Central Powers to foresee and provide a sufficient war reserve of strategic raw material greatly handicapped their conduct of the war. Shortly after war was declared England actively operated

against German commerce so effectively that it practically ended importation of supplies. The shortage of the required materials for the manufacture of munitions and war equipment either caused this to be discontinued or greatly delayed it until substitutes could be provided.

(11) **RUSSLAND IN ASIEN. MILITÄRGEOGRAPHISCHE STUDIE.** [Russia in Asia. A military geographical study.]

A geographical study of Siberia with details as to terrain, natural resources, inhabitants and transportation systems, is given in this article. The three subdivisions, Turkestan, Central Siberia, and Eastern Siberia are discussed in regard to the military situations existing in Manchuria and Mongolia.

(12) **DAS FRANZÖSISCHE KOLONIALREICH.** [The French colonial empire.] (II) Lieut. Colonel Dühring

FOREIGN POLICY REPORTS

8 May 1935

- (1) **THE ARAB NATIONALIST MOVEMENT.** MacCallum

22 May 1935

- (2) **PROGRESS OF AMERICAN TARIFF BARGAINING.** Popper

5 June 1935

- (3) **AIMS OF HITLER'S FOREIGN POLICY.** Wertheimer

19 June 1935

- (4) **EUROPE'S STRUGGLE FOR SECURITY.** Dean

3 July 1935

- (5) **CHURCH AND STATE IN MEXICO.** James

17 July 1935

- (6) **A NEW CONSTITUTION FOR INDIA.** Bisson

31 July 1935

- (7) **BRITAIN'S ECONOMIC RECOVERY. POLICIES OF THE NATIONAL GOVERNMENT.** Koren

14 August 1935

- (8) **BRITAIN'S ECONOMIC RECOVERY; PROSPECTS FOR PROSPERITY.** Koren

Section 5

ACADEMIC NOTES, C. & G.S.S.

REPRINT OF CURRENT SCHOOL MEMORANDA, WHICH AFFECT
INSTRUCTIONAL PROCEDURE OR TACTICAL DOCTRINES.

UTILIZATION OF TERRAIN IN TACTICAL OPERATIONS

PURSUIT

	Paragraph
Tactical principles and methods.....	1
Influence of terrain upon the enemy's action.....	2
Influence of terrain upon the direct pressure force in pursuit.....	3
Influence of terrain upon the operations of the encircling force.....	4
Influence of terrain upon air operations.....	5
Advance planning.....	6

1. **TACTICAL PRINCIPLES AND METHODS.**—The purpose of the pursuit is to reap the fruits of victory by disorganization and annihilation of the defeated and retreating enemy. Though the pursued force has a measure of initiative in choosing the direction and manner of retreat, the pursuer has a strong moral advantage which invites him to act boldly and relentlessly and permits of taking chances which would be too dangerous in other circumstances.

In general, pursuits combine direct pressure with an encircling maneuver and with the action of any available air force. The direct pressure is executed by the main force of the pursuer, advancing directly upon the enemy and endeavoring to overtake and destroy him. At the same time, an encircling force, of especially mobile troops, is sent around the flank to operate against the head or flanks of the enemy in order to cause disorganization and losses, to force him from his line of retreat with consequent confusion and lack of supply, or even to turn his retreat in a certain direction desired by the pursuer, to deny him favorable defensive positions for resisting the direct pursuit, to prevent his executing demolitions to delay the pursuit, but especially in order to delay him so that the direct pursuit may overtake him. The available air force is similarly employed to harass, delay, and disrupt the retreating enemy force, thereby furnishing support to both the direct pressure and the encircling maneuver.

2. **INFLUENCE OF TERRAIN UPON THE ENEMY'S ACTION.**—*a. Terrain objective of the retreat.*—The enemy's retreat may have some definite terrain objective, which may be his own territory, or an important terrain feature (as a city) which his mission may require him to protect, or a terrain feature which offers safety (as an obstacle or a strong defensive position).

Or, on the other hand, there may be no definite terrain objective, and he may simply seek safety by delaying and outdistancing the pursuit or by moving toward reinforcements.

b. Obstacles.—The enemy may seek safety under cover of a difficult terrain obstacle, such as an unfordable river or a mountain range, behind which he may attempt to halt and defend himself. In order that the retreating enemy may utilize to his greatest advantage the obstacles, major or minor, which he has succeeded in passing and has thus placed between himself and the pursuer, he will enhance their effectiveness by means of demolitions. The pursuer must be prepared to encounter and

overcome demolitions which will be as complete and continuous as the enemy's foresight, time, and means will permit.

On the other hand, a difficult terrain obstacle forces the retreat to cross it at defiles, and the obstacle is usually therefore a danger to the retreating enemy before it becomes a protection to him. For this reason he may avoid it instead of seeking safety behind it.

c. Communications.—The line over which the enemy originally advanced usually contains his line of communications, which it is generally difficult and perhaps impossible for him to change, especially when his force is disorganized by defeat. Therefore, in making his selection among the various possible lines of retreat, there are usually strong reasons for retreating along the line of communications. The available roads, railroads, bridges, and mountain passes will similarly influence his selection of the line of retreat.

Any especially sensitive points, as defiles, along the line of retreat, may be initially guarded by him, or he may later send troops to secure them.

d. Conclusion as to the enemy's line of retreat.—The enemy may thus have more than one possible or favorable line of retreat. A study of the terrain, having in view the considerations presented above, will be a valuable aid in drawing a conclusion as to which line or lines of retreat he may use. In any case, definite information of his actual routes of movement is intensively sought by reconnaissance, especially reconnaissance by aviation and cavalry.

e. Covering and delaying positions.—Whatever the direction of the enemy's retreat, he will place troops on various successive covering and delaying positions, first to protect the initial reorganization after withdrawal, and thereafter to protect the retreat. These enemy positions can frequently be predicted from a consideration of terrain when taken in connection with the tactics of withdrawal, retreat, and delaying action. Among other attributes considered in the selection of these positions, the factors of distant observation, long fields of fire, obstacles on front and flanks, and covered routes of withdrawal are especially desirable.

3. INFLUENCE OF TERRAIN UPON THE DIRECT PRESSURE FORCE IN PURSUIT.—*a. General action.*—The influence of the terrain upon the direct-pressure force in the pursuit will depend greatly upon the action of the retreating enemy. The enemy's operations may vary from the delaying actions of small units to large coordinated delaying actions, or even to the holding of a defensive position. His principal delaying weapons will be machine guns and artillery, both employing long-range fire to a great extent.

A study of the terrain will be a necessary assistance in selecting the methods of attacking such resistance. In general, the direct pursuit, pressing forward incessantly upon a broad front, will employ covered routes to penetrate the enemy's positions, especially between delaying elements, and will also use covered routes to outflank resistance. Attacks against any strong resistance encountered will be influenced by the terrain in much the same way as in the attack of a position. If and when the enemy is overtaken, the terrain will influence the location of the main blow to complete his destruction.

b. Artillery.—At the beginning, covered areas which will probably be used by the enemy as assembly points in his withdrawal are targets for artillery pursuing fire. Enemy communications, especially at important crossroads, bridges, and other defiles, are subjected to interdiction by artillery. Still other targets will be indicated by the tactical situation.

c. Communications.—Since the enemy may be expected to obstruct the communications to the utmost of his ability, special efforts will be needed to reopen them. More than ordinary attention must be directed to this matter in order that the pursuing troops may not, through failure of supply, be too greatly weakened and forced to stop. In spite of intensive efforts to repair the roads, it may be impossible, in an extreme case, to repair more than a single route, with consequent restriction of supply, and the pursuer may even be forced to reduce the strength of the pursuing troops to such as can be supplied.

d. *Zones of action.*—Zones of action of pursuing troops are adjusted to the terrain, partly so as best to utilize the available communications net, and partly so as to fit the attacks of small or large units.

4. INFLUENCE OF TERRAIN UPON THE OPERATIONS OF THE ENCIRCLING FORCE.—a. *Possible lines of action of the encircling force.*—The possible lines of action of the encircling force include the following:

- (1) Barring the passage of an obstacle to the enemy:
 - (a) By occupying and holding the defiles, or
 - (b) By interdicting the defiles by fire.
- (2) Occupying a defensive position or positions across the enemy's line of retreat.
- (3) Occupying a defensive position on the flank of the enemy's line of retreat.
- (4) Attacking the enemy's columns.
- (5) Delaying the enemy by means of demolitions.
- (6) A combination of two or more of the above.

b. *Barring the passage of an obstacle.*—(1) *Occupying and defending the defiles.*—A study of the terrain will frequently reveal the presence of a difficult obstacle lying across the line of retreat of the enemy. Such an obstacle may be an unfordable or difficult stream, a mountain range, a heavy forest, or the like. The passages across this obstacle constitute defiles. If these defiles are occupied and defended by the encircling force this force may definitely stop or seriously delay the retreating enemy, or may force him to change his direction of movement and perhaps abandon his previously-used line of communications.

The most sensitive point on the line of retreat should be selected, the blocking of which will cause the enemy the greatest delay and confusion. It should not be located too far in rear of the enemy, for he might then have time to reorganize his forces before reaching it. It should not be so close in rear of the enemy's original position as to make it unlikely that the encircling force can reach it.

Since the encircling force must usually be a relatively small portion of the pursuing force, it may have to resist obstinately against the action of a force of the enemy which is much stronger than itself. Accordingly, a strong position involving reasonable safety to the encircling force will enable it the longer to continue its action and to reap the maximum benefits in delay to the enemy. The occupation of an obstacle in order to deny the enemy's passage across it usually affords such desirable characteristics.

(2) *Interdiction of defiles.*—It may occur that the selected obstacle can not be occupied because the enemy already holds it in such strength that an attack offers no reasonable probability of success or would involve too great delay, loss, or disorganization. In such case the necessary action may be to interdict the passage of the obstacle by fire. The effectiveness of the interdiction will obviously vary with the suitability of the position from which the fire is delivered, especially with the quality of the terrestrial observation, as well as with the nature of the defile upon which the fire is placed.

c. *Occupying a defensive position or delaying positions across the enemy's line of retreat.*—Another method of operating is to occupy a defensive position across the enemy's line of retreat in order to delay him or to prevent his occupying the position and thus holding off the direct pursuit. Depending upon circumstances, it may be possible to defend such a position stubbornly. However, the enemy may attack it with greatly superior forces, in which case the encircling force must be prepared to retire before being destroyed, and to continue delaying actions on successive positions. Terrain considerations involved in the selection of the position or positions across the enemy's line of retreat will be those involved ordinarily in the selection of other defensive or delaying positions.

d. *Occupying a defensive position upon the flank of the enemy's line of retreat.*—With the occupation of a defensive position upon the flank of

the enemy's line of retreat, the encircling force places fire upon the line of retreat, preferably at its most sensitive point. Such a sensitive point may be a defile across an obstacle, a bottle neck in a difficult road situation, an important road or railroad junction, or the like. Delay is thus gained by halting his movement, forcing a detour, or making it necessary for him to turn to the flank against the defensive position and lose the time required to attack it. In the selection of such a position, the factor of observation, for the control of fire upon the enemy's line of retreat, is of especial importance. Other terrain considerations are usually those involved in the selection of a position which is to be defended stubbornly against a superior force, though such a position might not necessarily be held to the last. This type of position is most effective when it can be combined with the action of interdiction fire upon an important defile, and when it is located so that fire can be delivered near the heads of the enemy's retreating columns.

e. Attacking the enemy's columns.—Still another method of operating is to deliver repeated attacks against the enemy's columns, thus inflicting casualties, making captures, causing confusion and demoralization, and forcing the enemy to delay in order to defend himself against the attacks. The nearer the encircling force strikes to the heads of the retreating columns, including trains, the more effective will be the delay, and the better will be the chance of destroying the whole hostile force. The terrain considerations for attack will be somewhat different from those ordinarily involved in the attack of a defensive position. Since the attackers will not necessarily desire to close with the enemy, but can act largely by fire, observation and field of fire are especially advantageous, but covered approaches leading all of the way to the enemy's location need not be sought. However, where an attack is to be delivered against trains, which are less able to defend themselves than are troops, terrain may be sought which favors closing with the enemy.

f. Demolitions.—The action of the encircling force will be greatly favored by demolitions and other obstructions placed by the encircling force in or across the enemy's line of retreat. Demolitions and other obstructions may be used to advantage in connection with any of the possible lines of action of the encircling force. They are particularly effective when used in connection with a terrain obstacle and when covered with fire. In some cases, they can be executed by small parties which push in rapidly to execute the demolitions and then retire. In exceptional cases, it may be possible, even in the early stages of the combat, for small rapidly-moving demolition detachments to reach and obstruct sensitive points in the enemy's rear.

g. Plan selected.—The plan selected for the encircling force may be a combination of several lines of action, as in the case of a flank position used in connection with interdiction fire upon a sensitive point. Frequently, action of one kind will be followed by action of another kind. The choice depends, among other things, upon the terrain at different points of the line of retreat. An important consideration is whether the encircling force can reasonably be expected to reach the terrain objective or area which is selected for its operations. As a general rule, the effectiveness of the encircling force will be greatest when it is able to delay the enemy at important terrain obstacles and defiles.

h. Roads.—For the necessarily rapid movement of the encircling force, roads are necessary. The type and quality of the roads selected will depend upon the kinds of troops employed in this maneuver. The whole encircling force need not, and often will not, move on a single road; for example, motorized units may take wide detours to obtain better roads and to insure complete avoidance of enemy interference with its necessarily vulnerable route column, while cavalry, on the other hand, can more easily risk enemy interference and may take roads which are shorter. The roads which are used should be generally parallel to the enemy's line of retreat and far enough from his flank to avoid serious hindrance from the enemy's protective detachments until the encircling force has

reached a point from which it intends to strike. The reconnaissance of its own route must include any difficult terrain obstacles where the passages are liable to be destroyed by the enemy, in order that such crossings may be avoided or that timely repairs may be made.

i. Troops.—Since speed of movement is a primary consideration, the forces most likely to be used are cavalry, infantry in trucks, artillery, preferably capable of rapid mechanical movement, tanks, and other mechanized vehicles. Engineers will be required to overcome obstacles interposed by the terrain and the enemy, and, in connection with detachments of other troops, to execute demolitions. Chemical units may combine the use of artificial fog with the action of other arms. The terrain suitable to the operations of these different types of troops varies, and the plan of action will vary in accordance with the capabilities of the troops available.

5. INFLUENCE OF TERRAIN UPON AIR OPERATIONS.—The available air force attacks enemy troops, communications, and establishments. The terrain will assist in indicating the routes and the halting areas of troops, and the locations of establishments. Troops and communications are attacked especially at defiles across obstacles.

6. ADVANCE PLANNING.—The study of the terrain in connection with the pursuit can and should be made well in advance of the time at which the pursuit is to be initiated. It should thus be possible to plan the pursuit, to make preparations for it, and to initiate it promptly. Speed being a predominant consideration, the advantages secured by the pursuit are greatly enhanced by foresight.

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Section 6

BOOK REVIEWS

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Balbo, Air-Marshel Italo.—**My air armada.** (Translated by Gerald Griffin.) London, 1934—286 pages.....M 409-C.45

CONTENTS: The selection of air bases for the flight; The air armada's flying-boats; Mussolini and the King of Italy optimistic about the prospects of the flight; A minor accident; Adventures of the *Alice*; Air-Marshel Balbo crashes; Flying over the Alps; The Amsterdam fatal crash; The flight over England and Scotland; The air armada in Ireland; Perils of the flight to Iceland; A gay time in Iceland; In the land of the midnight sun; Flying the ocean; In Labrador and Montreal; The air armada in Chicago; In New York; New York's tribute to Air-Marshel Balbo; Anxious days in Newfoundland; Fatal crash at the Azores; Home at last; A Roman triumph; Index.

Reviewed by Captain J.I. Greene, Infantry

This book is a translation of Air-Marshel Balbo's popular account of his remarkable flight to America in 1933 with 24 Italian hydroplanes. Although it contains the full story of his unequalled feat, which was significant of the highest type of leadership and ability, the volume is spoiled for the military reader looking for an interesting factual narrative, by the amount of bombast, Fascist propaganda, and elementary American geography it contains. However, the interesting story is there, if the reader is willing to plunge knee-deep through heroics to find it.

Strangely the volume contains no summary by the author touching upon the broad aspects of his flight and the conclusions that might be drawn from its success. Once the air armada returns and the decorations are conferred, the book ends.

There are 48 excellent illustrations, 24 of which show Air-Marshel Balbo with various notables, including the King of Italy, Premier Mussolini, the Mayor of Chicago, and a Sioux Indian Chief. There is no map of the route of flight contained in the book.

Clark, Grover.—**The Great Wall crumbles.** 1935—406 pages.....M 951

CONTENTS: Preface; An adequate perspective; Across the barriers; China and the Chinese; Building the Wall; Inside the Wall; Mutual arrogance; In a valley of confusion; The breakthrough; The dynastic collapse; The new currents; Rebuilding the government; Some potent influences; The new revolt; Crumbling western privileges; The new menace Cooperation or disaster?; Index.

Reviewed by Major F. During, Infantry

Mr. Clark's own phrase, "an adequate perspective," is the phrase which most perfectly describes his book. It presents indeed an admirable point of view of China, linking her present intelligibly to her past, considering her current problems sympathetically, and suggesting the future with proper reservations of opinion. The result is that we have here a compact and well-balanced picture of China, important not so much in material as in presentation.

For Mr. Clark has not so much new material to offer on China as new things to say about what is already known. This is valuable in many ways, the chief of which is to help the average person to understand facts heard and seen but not comprehended. China's difficult history, for example, hopelessly involved, for the Western reader, in time and tradition, is here succinctly presented as the foundation for China's rising civilization and for her extraordinary system of government, which, until modern changes took place, was perhaps equalled by no other known system for its elasticity and the measure it gave of individual freedom combined with social safety. The change which has come into China because of international relationships is well described, and not only the changes in China, but the changes in the Western people towards China and new relationships resulting. This change in the West is of great importance, for had it not taken place China could scarcely have hoped for the almost complete freedom she has had in the last two decades to develop her own destiny. Incidentally, by now she would have lost all independence, if not forever, at least for a time.

There are scattered throughout Mr. Clark's book interesting bits of exposition, discussions, for instance, of the relation of democracy and despotism to population, of the Chinese and Japanese feeling toward blondeness, which has long been associated in the Orient with savagery and evil, of the old Chinese government, which Mr. Clark admirably defines as a "despotism founded on morality and tempered by the moral right to revolt."

In other chapters the changes in Chinese government, economics, and foreign relations, particularly with Japan, are dealt with, and one is able to get a view if not detailed at least balanced and whole. Indeed the impressions of this book are of China, her history, her people, her government, as seen from an airplane.

It is an invaluable book for the average person who wants to understand China better, but who has not time to delve into many volumes. [*Saturday Review of Literature*, 16 February, 1935]

Fortescue, B.—**Napoleon's heritage.** An ethnic reconstruction which explains his mortal duel with England. London, 1934—318 pages.....M 94405-N

CONTENTS: The Island of Corsica; Ethnic characteristics; Distinctive civilizations in the Island; Consistent racial peculiarities; Distinctive racial canons and customs; *Bonaparte Hegira*; Napoleon's "vindication"—Toulon—Marriage and first Italian campaign; Egyptian campaign—Return and "First consul" autocracy; The five brothers; The brothers—*First abdication*: "Vindication" resumed in the *Hundred Days*—To Waterloo and St. Helena; Typical "deathbed religion"—Native death and funeral customs—Consistent sentiments of *Madame Mère*. Index.

Reviewed by Major F. During, Infantry

It is, as Napoleon said, often our way to ascribe to subtlety actions that, in fact, have simple motives, and in this interesting book, Mr. Fortescue tries to prove, using many quotations, that the mainspring of Napoleon's actions was heredity, for "man's genius—the genius of any man whatsoever—is tintured, qualified, conditioned by national even more than family inheritance."

Much of the book is taken up with a detailed description of the island, natural features and climate, the two races which inhabit it, and the racial character of both. Then the author shows that all characteristics—sense

of personal and family honor, greed for preeminence, passion for vengeance under insult or wrong, and clan spirit—are displayed in the history, life, and deeds of the greatest Corsican of all times. The Corsicans are apparently an Arab—Berber race. The Bonaparte family was degraded by Paoli “the protegee of England.” England became, therefore, the “obvious victime choise for Napoleon’s avenging rehabilitation in his own and other Libyan-Corsican eyes” and this revenge was pursued with true Arab tenacity and patience. Napoleon’s treatment of his wives was oriental; the quarrels between himself and his brothers were typically Arab—Berber because of that “passion for equality which in all its epochs has animated the Berber race . . . kindling ever envy and jealousy . . .” Napoleon also possessed the oriental characteristic of effrontery and, true to type, he finally claimed from England, his enemy, the sacred right of asylum.

France. *Ministere de la Guerre.—Instruction pratique sur la defense passive contre les attaques aeriennes.* [Practical instruction on the passive defense against aerial attacks.] France, 1934—93 pages. . . . M 503-C6

CONTENTS: Avant-propos; Organisation de la defense passive; Preparation de la defense passive; Mesures de realisation.

[Preface; Organization of the passive defense; Preparations for the passive defense; Precautions to be taken.]

Reviewed by Captain J.I. Greene, Infantry

The complete contents of this French official handbook for civilian governments, as given, shows the thoroughness with which France is preparing for an eventual aerial war. The book is simply a manual of instructions issued by the national government, directing the immediate organization of Department and Commune governments for passive anti-aircraft protection.

A brief foreword states: “With regard to the international agreements to which France has subscribed, the French government will endeavor, at the beginning of a war, and in accord with its Allies, to obtain from the enemy governments an agreement not to use chemicals as a means of combat. If this agreement is not reached, the right is reserved to take action according to the circumstances.”

In the introduction, however, the expectation is expressed that enemy aviation will, in the next war, operate against not only the French forces but the whole nation. “Besides,” it is declared, “this aggression could occur during the first hours of mobilization or even before. Attack from the air therefore will often be invested with the characteristic of surprise.”

Jessup, Phillip C.—*International security.* The American role in collective action for peace. 1935—157 pages. . . . M 007-G6

CONTENTS: Foreword; Introduction. Part I: Historical summary of the attitude of the United States from 1919 to 1935: The League of Nations; The Briand-Kellogg Pact; Disarmament; Consultation; Arbitration and conciliation; Conclusion. Part II: Possible American contributions to collective security: Introductory; General aspects of collective security; What might the United States promise to do?; What will the United States do?; Conclusion. Index.

Reviewed by Major G.B. Drummond, Field Artillery—Reserve

This book is a study prepared for submission to the Eighth Annual Studies Conference which met in London on 3 June, 1935, to consider the question of Collective Security. The study was prepared under the direction of a Committee of the Council on Foreign Relations. Military and Naval representatives on the committee were Major General George S. Simonds and Rear Admiral William V. Pratt.

Part I is a factual account of the participation of the United States in efforts to promote peace since 1919. Even though membership in the

League of Nations was rejected and for the first six months of the Harding administration, the Secretary of State did not even acknowledge communications from the Secretary General of the League, in 1923 the United States was represented by unofficial observers in "consultative capacity" at non-political League conferences, such as those dealing with opium, transit, communications, and customs formalities. Cooperation with the League in a half-hearted manner was evidenced in the negotiations for the settlement of the Leticia boundary dispute, the war in the Chaco, and in the Sino-Japanese controversy in Manchuria. Opposition to the League has also prevented membership in Permanent Court of International Justice. American interest in the Geneva Protocol of 1924 is pertinent only because it was an effort by an American group to provide a test for an "aggressor."

Both interest and emotions were aroused most in this country by the Pact of Paris or the Briand-Kellogg Pact for the renunciation of war as an instrument of national policy. When M. Briand suggested such a treaty between France and the United States in 1927, Mr. Kellogg responded with a suggestion that it be expanded to include all governments of the world. Signed at Paris on 27 August, 1928, it was ratified by the United States Senate on 15 January, 1929, with the understanding of three interpretative reservations:

(1) "That the Pact did not curtail or impair the right of self-defense and that each nation was free to judge for itself just what was necessary in the exercise of this right;

(2) "That the United States considers the Monroe Doctrine part of its national defense and that the right of self-defense allowed by treaty must therefore include the right to maintain the Monroe Doctrine;

(3) "That the treaty does not provide sanctions, express or implied, that there is no obligation or commitment, express or implied, to engage in punitive or coercive measures."

This Pact has been invoked on two occasions: First in the summer of 1929, as war seemed imminent between China and Russia, and again in 1931 upon the occasion of the Sino-Japanese dispute in Manchuria. In his note of 7 January, 1932, Secretary Stimson informed both the Chinese and Japanese governments that recognition would be withheld from any treaty or agreement entered into as the result of any violation of the pact. Thus there was pronounced an entirely new corollary to the Pact. Again in an address delivered in New York City on 8 August, 1932, Mr. Stimson said in effect that the Pact had put an end to the old idea of neutrality and that there was no longer any such thing as "neutral rights." These two interpretations, together with the reservation of self-defense, express the present attitude of the United States toward the Pact.

In the field of general disarmament the United States has been more than generous, although the question as it bears upon collective security is of interest mainly in the Asiatic and European areas. The Washington Conference on the Limitation of Armaments in 1922 had as necessary political concomitants the Four-Power and the Nine-Power Treaties. The first was to bring to an end the Anglo-Japanese Alliance of 1911, and the other was to insure the open-door in China. The London Conference of 1930 was a logical offspring of the Washington Conference. Other efforts at general disarmament have reached stalemates because of the demands of European nations, particularly France, to demand pledges of security. The interest of the United States in disarmament is not based upon the same fear of security as is the case in Europe, and no change in the armaments of this country will affect in any real degree the attitude of the powers of Europe as to the safe level of their own armaments.

As a result of the Four-Power and Nine-Power Treaties, the government of the United States has committed itself to an international procedure denoted as "consultation." In these treaties the commitment

was limited (1) geographically to insular possessions in the Pacific area; (2) in substance so as to exclude domestic questions, thus eliminating the matter of Japanese immigration into the United States; and (3) so as to not bind the United States to become a party to any action which might be agreed upon.

Also, in the Briand-Kellogg Pact there is an implicit obligation to consult.

Another treaty of non-aggression is the Argentine Anti-War Treaty signed at Rio de Janeiro on 10 October, 1933. At the end of 1934, thirty nations had ratified it. While it contains no express commitment to consultation, it does declare that in case of war between any two signatories, other contracting parties "will adopt in their character as neutrals a common and solidary attitude."

Traditionally, the United States has been one of the leading exponents of arbitration. Since 1919, twenty-eight treaties have been adopted with other nations providing for the submission of controversies to commissions. Four reservations are of interest: (1) domestic matters are excluded; (2) matters involving the interests of third parties are excluded; (3) questions concerning the Monroe Doctrine are excluded; and (4) obligations of France in accordance with the Covenant of the League of Nations are excluded.

Often confused with the idea of arbitration is that of conciliation. The important difference is that arbitration contemplates reference to a tribunal with power to make a binding decision, whereas conciliation involves merely investigation and recommendation, with no binding effect. It is due to this difference that the United States has become a party to numerous conciliation treaties.

The most notable group of conciliation treaties are the so-called Bryan Peace Treaties of 1914, 1915, and 1916. The most important characteristics are their all-inclusive scope and the provision for a "breathing spell" during which period neither litigant shall make any act of force pending the report of the investigators.

Aside from the Bryan treaties, eighteen new conciliation treaties of a slightly different type have been concluded since 1919. The first step was the conclusion of a multipartite treaty between the United States and the five republics of Central America, in order to unify and recast the Bryan treaties. The second step was the Gondra Convention at Santiago de Chile in May, 1923. This treaty was supplemented by General Treaty of Inter-American Arbitration signed at Washington on 5 January, 1929. These treaties create for the western hemisphere a permanent body with functions akin to some of those of the Council of the League of Nations. The machinery thus created was made more permanent by a protocol signed at Montevideo on 26 December, 1933.

The foreign policy of the United States since 1919 may be characterized as based upon the principle of retaining liberty of action with entire freedom to form independent judgment upon facts and situations as they arise.

In Part II of this study the committee then proposes to answer two questions. What might the United States promise to do? What will the United States do?

The committee believes that this country, while not yet ready to accept membership in the League of Nations or adhere to the World Court, would be willing to join in a non-aggression pact defining aggression as the movement of armed forces across the frontiers, provided that other nations are able to offer a consideration in the form of a general disarmament convention; provided that the United States retains full liberty to form its own judgment on the facts or on the report of an investigating committee; and provided the pact contains no express or implied obligation to use armed forces of the United States against the aggressor, if identified.

The United States is ready to conclude a treaty of disarmament, which would also limit and regulate traffic in arms. She will not accept

the principle of compulsory arbitration, but will continue to support the idea of conciliation, always reserving the right to make the final decision as to the submission of questions to arbitration and as to the acceptance of the verdicts of investigating commissions.

But what will the United States do in case of war between other nations? From her present commitments she will surely engage in consultations with other nations, except in such purely local matters as the recent controversy between Yugoslavia and Hungary as to the latter's responsibility for the assassination of King Alexander.

It is certain that the United States will still insist upon her rights as a neutral nation. In spite of Mr. Stimson's remarks referred to above, other nations have shown no indication to place an identical interpretation upon the Briand-Kellogg Pact. The Convention of the Elbe, the Nine-Power Treaty, the Convention on Maritime Neutrality in 1928, and the Argentine Anti-War Treaty all contain references to the rights and duties of neutrals.

The policy of neutrality is thoroughly imbedded in American tradition and practice. First announced by Washington as a means of preventing embroilment in the French Revolutionary Wars, it resulted in America's "limited war" with France in 1798 and the War of 1812 with England. In 1914 the United States adopted the policy of neutrality as the only alternative to war. The usual conflict over neutral rights began. It appears that the greater opposition aroused over Germany's submarine warfare threw the United States into the war on the side of the Allies, in spite of the continued violation of our neutral rights by English sea-power.

The Roosevelt administration apparently does not accept the idea that neutral rights have been abolished, especially in view of press dispatches to the effect that the State, Navy and War Departments are working jointly upon proposals for the elaboration of a new American neutrality policy. The problem to be attacked is that of difficulties arising between belligerents and neutrals resulting from interference with neutral commerce at sea. The United States Senate has so far indicated its unwillingness to approve the imposition of unilateral embargoes based upon presidential determination of an aggressor.

Taken in its entirety, this study impresses one by its even temper and reason. While it appears at times that the rapporteur resorts to special pleading resulting from certain convictions, for instance in discussing the failure of the United States to join the League of Nations and the World Court, it is notable that the study does not ascend to theoretical and impracticable heights as does so often the idealistic flights of many seekers after world-wide peace.

Ludwig, Emil.—**Hindenburg**. Translated by Eden and Cedar Paul.

1935—560 pages..... M 9403-E4-E.43-B92 (HI)

CONTENTS: Foreword; Chronological table; Book One—The first flag; Book Two—The war flag; Book Three—The second flag; Book Four—Between the flags; Book Five—The third flag; Glossary; Index.

Reviewed by Major F. During, Infantry

The author tells in this long and detailed portrait of the President and General, whom Germany and the world have learned to revere, a tragic tale of human limitations. Herr Ludwig has failed to interpret the soldier's and the Prussian's mind with sympathy and understanding; the book is fundamentally skeptical, malicious, and uncharitable, but it is vivid, dramatic, and easily readable. It is written in the same narrative style as the author's earlier books.

In the opening pages we are introduced into the feudal atmosphere of East Prussia Junkerdom, bound to the King and the land; poor, proud, ignorant, exclusive, but with the military qualities of discipline and loyalty. "Incorrigible spongers" Herr Ludwig calls them, as he describes a state of affairs in which service for years had been bartered for land, in

which many still held the view that "the promotion of the burgher to the status of army officer is the first step in the decline of the State." We see young Hindenburg leaving for his military academy in 1859, preparing for the only education he was to know. He was then eleven years old. Looking back on that narrow and exclusive training, he was to write that he had learned there that "duty takes precedence of right"; and it was this principle that led to the mistakes, disloyalties, and shufflings of his time as President. At eighteen he had a glimpse of war, of victory, and of Paris. Then he settled down to forty years of quiet and useful activity, studying the theory of war and spending eight years on the General Staff. Without patronage, money, or brilliance he became one of the twenty-four senior officers of the Army. He had reached by 1914 the limits of achievement; he was content and respected, and his military position procured him invitations to shoot—his only hobby.

With his appointment as a steady man to the East Prussian command in August, 1914, and his perseverance with the dispositions of Hoffman and the brilliant plans of Ludendorff, leading to Tannenberg, the most decisive German victory of the War, the legend begins. Herr Ludwig gives a most vivid description of the partnership between Hindenburg and Ludendorff, each making good the defects of the other, neither able to escape from the limitations which caste and military training had left on his mind. And it was now that Hindenburg's imperturbability, fine physique, rugged features, and regular habits attracted the popularity and gratitude due to the ability of Ludendorff. He won the hearts of all Prussians when he declared that "the War suits me like a visit to a health resort." Neither he nor his partner ever referred to the battle of Tannenberg in the presence of the other; when apart, each began references to that battle with the phrase: "When I won the battle of Tannenberg." We then see this curious team browbeating the Emperor, removing Bethmann-Hollweg, insisting on the "ruthless" submarine campaign, scoffing at the threat of American, Swiss, and Dutch entry into the War. Though Hindenburg boasted of his "unpolitical nature" he virtually forced "the autocracy of the military command" on every sphere of German life. What the political parties called a "party truce" the generals called a state of siege. When disaster was near in the autumn of 1918, they refused to admit its imminence, and urged at a conference at Spa the tightening up of discipline at home. When the game was up, they forced the responsibility for making peace on the politicians, whom Ludendorff was afterwards to blame for Germany's defeat. Another legend had been formed—the "stab in the back" legend; and Hindenburg retired till a cruel fate brought back this passionate Royalist to break his oath to the Emperor and lead, as Herr Ludwig describes it, the Republic to disaster.

It is the linking up of the War with the present Nazi regime that will make the book specially interesting to contemporary readers. In the absence of papers and facilities for research there was little new material the author could use for his sketch of the events leading up to the sordid intrigues of von Papen, Schleicher, and Herr Hitler himself inside and outside the Presidential palace during 1932. We see the simple old man the victim of personalities all identifying the public interest and their own advancement—Junkers, industrialists, military leaders, and National Socialist petty bourgeois. Herr Ludwig's method is seen at its best in his reconstructions of Brüning's relations with the President and the elaborate intrigues which led to the Junker-Nazi coalition of 1933.

Had the author been content to write and work as a historian, he might have produced an authoritative indictment of the Prussian rôle in Germany. As it is, references to authorities are few and far between; fact and imaginative surmise are woven into one pattern; and the critical reader will find a bias and exaggeration which make the book more dramatic but less trustworthy. There is in it nothing of value about Hindenburg as a general or about his undoubtedly moderating influence in the early days of the Nazi revolution. The whole book is an exposure of the absurd

domination allowed by Prussia—and Germany—to the military caste.
[*London Times Literary Supplement*, 18 April, 1935]

Macdonnell, A.G.—**Napoleon and his marshals.** 1934—368
pages.....M 94405-N3-C

CONTENTS: The Army of Italy; The old Republicans; Egypt; Masséna and Suvorov; The great coup; Marengo; Making the *Grande Armée*; Austerlitz; Jena and Auerstadt; Eylau and Friedland; The first triumphs in Spain; Aspern-Essling and Wagram; The lines of Torres Vedras; Still the peninsula; Moscow; Leipzig; The abdication; The eagle flies to Notre Dame; The end of the story; Bibliographical note; Index.

Reviewed by Major F. During, Infantry

Mr. Macdonnell speaks comparatively little of Napoleon in this book, mentioning his words and deeds only when it is necessary to make the progress of the narrative clear. His chief subjects are the twenty-six most dissimilar men who, at various times, were made Marshals of France by Napoleon.

The heroism which these sons of innkeepers, farmers, or obscure lawyers displayed on battlefields; the clamor of personal ambitions, greeds, and vanities with which their noisy crowd constantly besieged Napoleon; the colossal authority over Europe's affairs which was in their often talented but still more often unscrupulous hands at the time of their master's greatness; their rôle in the society of the First Empire, of which, with their sonorous ducal and princely titles of Napoleon's make, they formed the backbone; and, finally, the ease with which most of them betrayed Napoleon when the hour of the Bourbon Restoration had come—all this makes a unique story.

Mr. Macdonnell tells his story vividly and amusingly. He introduces the marshals, one after the other, in the order of their chronological emergence on the historical stages, and sketches briefly their previous careers and personalities.

Here and there the story of the marshals' activities and relations is enlivened by a light and interesting description of a battle, by episodes from France's social life, by this or that historical anecdote.

What were the military talents of Napoleon's marshals? There were among them, Mr. Macdonnell tells us, undeniable military geniuses, such as Masséna and, especially, Davout; there were excellent, although not impeccable, generals like Ney (the description of the dogged, iron perseverance with which he managed to preserve the remnants of the decomposed French Army on its unglorious retreat from Russia forms one of the most interesting portions of the book); but they also counted in their midst such nonentities as Macdonald, with his "almost unbroken record of defeats," or Victor, whose name was "the nearest he ever got to victory."

And how, sometimes in the midst of the most vital campaigns, the marshals intrigued, fought, and quarreled! Ney intensely hated Murat; Lannes and Augereau described the King of Naples as "a dancing dog, a mountebank, and a plumed cock"; Bernadotte complained on the eve of the Battle of Eylau that Berthier, the chief of Napoleon's staff, purposely antedated his orders so as to embroil him (Bernadotte) with the Emperor.

The most impressive chapter is that dealing with Napoleon's return from Elba and the Hundred Days. To remain faithful to the Bourbons (to whom after Napoleon's first abdication they had sworn allegiance), or to return to the old master? It is in this dramatic moment that their characters revealed themselves best, and Mr. Macdonnell sketches their behavior at this crucial moment very effectively.

Especially dramatic are the passages dealing with the old fighter Ney, who first promised to his new masters to bring Napoleon to Paris "in an iron cage" and who suddenly wavered, having received Napoleon's order scrawled on a sheet of paper: "Meet me at Châlons. I shall receive

you as I did after the Moscova." [*New York Times Book Review*, 1 April, 1934]

Mangin, General E.—**Un regiment Lorrain. Le 7-9. Verdun—La Somme.** [The 79th Infantry Regiment. Verdun—The Somme.] Paris, 1934—253 pages.....M 9403-J.44:6

CONTENTS: Préface; Avant-Propos. Première Partie: Nomination au commandement du 7-9 secteur de Champagne (Novembre-décembre 1915). Deuxième Partie: La Lorraine (Janvier à mars 1916). Troisième Partie: Verdun (Mars-avril 1916). Quatrième Partie: La Somme (Avril-juillet 1916).

Reviewed by Major F. Doring, Infantry

General Mangin commanded the 79th Infantry Regiment during 1916 when it took part in the defense of Verdun in the battle of the Somme. In the book he relates the history of his regiment with the intimate knowledge and the affection of a human commander and with all the care and discrimination of the historian for recording valuable and representative facts. The book is a valuable record of a French infantry regiment in the War. The concluding opinion of General Mangin is well worth reading. After referring to mechanized units he says: "In the last analysis there will always remain one factor which will retain its importance—the infantry."

Palmer, Frederick.—**Bliss, Peacemaker.** The life and letters of General Tasker Howard Bliss. 1934—477 pages..M 9403-E4-C.73-B92 (BL)

CONTENTS: The mountain; A classic home; Scholar and soldier; Marriage and early career; Decisive days in Spain; A brief campaign; Cleaning the Augean Stables; His first star; Ruling the Moros; Ticklish guard duty; Keeping peace on the border; Patient subordination; Logic without illusions; Age for wisdom; The long view; As his chief saw him; Keeping on the main track; His fourth star; A mission abroad; Bringing home the truth; With the Supreme War Council; Statecraft on trial; His labors for unity; His own best judgment; Awaiting the next blow; Alarm at the council table; Proud days for him; Against tangent adventures; Arbitrator among the nations; A breathing spell; Victory comes as a surprise; Peace or more militarism?; The great opportunity; His wisdom in shackles; The breaking dream; Righteous wrath; The treaty's aftermath; Rich and mellow years; Sunset; Index.

Reviewed by Major F. Doring, Infantry

This book is an important contribution to the history of American diplomacy, based upon the papers of the former Chief of Staff and American members of the Supreme War Council. General Bliss was a learned soldier, combining practical experience in the military art with a deep knowledge of history and a concern for contemporary international relations. The book contains chapters on Cuba (1898-1900) and the Philippines (1905-1909). But the real importance is derived from the light it throws on the conduct of the war and on the Paris Peace Conference. The author makes it clear that General Bliss exercised more influence on American policies as a member of the Supreme War Council than in framing the terms of peace. As a peace maker General Bliss was so handicapped by forces over which he had no control that his illusions were pretty thoroughly shattered. He was forced to write as late as 1 May, 1919, that he did not know what was in the treaty which had been handed to the Germans and which he was to sign. "Most of the articles I have never seen in any form," were his words, and at a later date he said, "Five years from now the world will condemn the conference . . . the treaty as it stands is unworkable. What a wretched mess it all is. If the rest of the world will let us alone, I think we had better stay on our side of the water and keep alive the spark of civilization to re-light the torch after it is extinguished over here." This hardly suggests that the peacemaker's work was a success.

Rouquerol, General Gabriel.—**Le 3e Corps d'Armée de Charleroi a la Marne. Essai de psychologie militaire. Les combattants et le commandement.** [The III Army Corps at Charleroi and the Marne. Essay on military psychology. The combatants and the command.] Paris, 1934—170 pages..M 9403-H6-C.44-F2-C3C

CONTENTS: Dédicace; Préface; Avertissement; Avant-propos. La retraite (24 août-5 septembre); Bataille d'Esternay (6 septembre); Conception de la manœuvre de la Marne; La poursuite; Considérations psychologiques.

Reviewed by Major F. During, Infantry

This book is a personal narrative of the retreat to the Seine and the battle of the Marne, with comments, and concludes with some "considerations psychologiques" and remarks on the high command and the general staff. There are many matters of great interest in it. We learn that General Franchet d'Espérey did not communicate to his corps commanders Joffre's orders of the night of 4-5 September (to turn about and fight) until "the middle of the morning" of the 5th. Thus the French Fifth Army made a full march to the rear on that day as did the British Expeditionary Force. When General Hache, the corps commander, came out from the interview with d'Espérey and told General Rouquerol of the order, the latter at once said:

"If we are going to turn about tomorrow, why not halt at once? Why make a march of 15 kilometers today to retrace our steps the same distance tomorrow? The troops are done. Is it to increase their fatigue? It is idiotic. We are not playing a war-game."

He subsequently learned that d'Espérey continued his retreat "in order to deceive the enemy and confirm his conviction that the French Army was in complete disorder, and thus render the next day's surprise the more effective."

In remarks on the high command and general staff, General Rouquerol makes the point that they failed to realize in October, 1914, that the so-called "stabilization" was in reality "siege warfare," and they persisted to the end in applying the principles of open warfare to their offensives. A book worth reading. [*Army, Navy & Air Force Gazette*, 5 January, 1935]

Schoszberger, Dipl.-Ing. Hans.—**Bautechnischer Luftschutz.** [Construction in anti-aircraft defense.] Berlin, 1934—240 pages....M 503-C6

CONTENTS: Vorwort; Krieg und Bauwesen; Zukunftskrieg; Luftschutz; Luftschutz und Aufbau; Schutzraum; Sondermassnahmen des Baulichen Luftschutzes; Städtebau; Luftschutz und Baukunst.

Reviewed by Major F. During, Infantry

The author, an engineer who has made a special study of this intricate subject, after a brief reference to the connection that has existed from ancient times between war and building construction, gives us his views on the next great war.

The war of the future will be decided in the air—and very rapidly. No country can hope to achieve victory without aerial preponderance. A decision will be arrived at, not in the encounter battle between the belligerent armies, but far back in the enemy's country by the destruction of whole cities from the air.

"Air protection"—to use the author's expression—does not mean concealment behind concrete blocks, nor a general "digging-in" underground. It means the abolition of back-to-back building and of slums in large towns, and the opening up of green spaces. It stands for the health and welfare of the people generally. It is in agreement with the "back to the land" policy, and encourages the development of garden cities. Its main object is to convince the enemy that bombing from the air is too costly a business to be worth while, and so to persuade him to abandon the attack.

There can be no complete protection without a large number of fighting planes, but the idea that a strong air force offers sufficient security presupposes that all countries are equally vulnerable. This is not the case. The most vulnerable countries are those with the densest population and the greatest number of large towns. England comes first, and Germany second, as the most vulnerable countries in Europe.

The writer divides buildings into four classes, in order of importance and size. The third class, which comprises most living houses, is by far

the largest. In protecting them from air attack, the greatest economy is essential.

Attacks on towns can be carried out by the following methods: explosive bombs, incendiary bombs, and bacterial bombs.

No roof or floor can be made thick enough to keep out the heaviest explosive bombs. Large bombs are, however, uneconomical; more damage can be done by an equivalent number of small bombs. The general principle to be adopted is not to attempt to keep big bombs out of a building, but to let them explode, offering as little resistance as possible.

Incendiary bombs are very much lighter than explosive bombs. The best protection against them is to avoid the accumulation of inflammable material, and to have fire extinguishers handy.

Gas bombing will probably be one of the methods of attack adopted in future, but not the most important one. Bacterial attacks are not likely to be attempted by any self-respecting nation.

A long chapter is devoted to the construction of shelters for occupation during an air attack. Camouflage, artificial fog, and dummy sites of towns (to be lit brilliantly at night) are referred to.

This review may be closed by quoting the last two sentences of the book: "In the distant future we may possibly succeed by 'air protection' in reducing aerial warfare against the civil population to an act of sheer folly, so that war may again be restricted to land. If, in the meantime, we have succeeded in ensuring a real, just peace between nations, a consummation that is devoutly to be wished, the labors of constructive 'air protection' will not have been superfluous, for, in order to secure their object, they will have helped to achieve what the well-being and health of the people have long been demanding." [*Royal Engineers Journal*, December, 1934]

Villate, Capitaine Robert.—**Foch a la Marne. La 9e Armee aux Marais de Saint-Gond (5-10 septembre 1914).** [Foch at the Marne. The Ninth Army at Marais de Saint-Gond, 5-10 September 1914.] France, 1933—286 pages.....M 9403-J.44:4N5-M

CONTENTS: Preface; Avant-propos. La 9e armée; Le terrain de la bataille; Le demitour (5 septembre); La prise de contact (6 septembre); L'engagement (7 septembre); L'attaque allemande (8 septembre); La victoire (9 septembre); La poursuite (10 septembre).

Reviewed by Captain J.I. Greene, Infantry

The legend of Foch at Saint Gond continues to grow apace. Ten centuries from now, perhaps, it will be recounted that the famous marshal and his Ninth Army drove back the tide of Germans almost alone. Certainly the way of exaggeration has already begun to be followed. And this book forms a substantial milepost by the road.

It is natural enough for the French to hallow peculiarly the Battle of the Saint Gond Marshes. Here their subsequent commander-in-chief early handled his forces to somewhat better advantage than most of the other French commanders during the first few weeks of the war. Thus, when his later and greater glory is reflected back, it strikes upon a performance that was at best only creditable but at the same time comparatively outstanding, and transforms that performance into a master's victory.

In reality the Ninth Army was heavily pressed for time, but only incidentally to the whole German scheme of maneuver. There was no great "drive" attempted by the Germans opposite Foch. The main effort was elsewhere. Foch fell slowly back under the weight of a superior enemy, who was shoving rather than thrusting against him. He finally had to borrow a corps from his neighbor, d'Esperey, and another from Joffre. With these reinforcements the Ninth Army held, and even gained a little in places. But when the German general retreat was ordered—not because of anything that happened at the Saint Gond Marshes, but because of the success of d'Esperey's Fifth Army farther west—the Ninth Army was too worn out to pursue.

Now, however, Saint Gond has become a glorious victory, although General Weygand, in his preface to Foch at the Marne, does not speak of the battle in quite the fulsome terms often read. Moreover, he finds it opportune to come to Foch's defense on more than one point.

Captain Villate has written an apparently careful account of the battle. Moreover, his French style is well above the average, making his book much more of a pleasure to study than the majority of similar works.

Section 7

LIBRARY BULLETIN

BOOKS ADDED TO THE LIBRARY SINCE JUNE, 1935

- American Year Book, 1934.** A record of events and progress for the year 1934. 1935 [973.916]
- Balet: Le drame de l'Extreme-Orient.—La Mandchourie.** [The drama in the Far East. Manchuria.] 1933 [M 9518]
- Brul: A German and English dictionary.** (Cassell's) Compiled from the best authorities in both languages. 1906 [433.2]
- Chamberlin: The Russian revolution, 1917-1921.** (2 volumes) 1935 [M 9403-C1-D.47-R]
- Clyde: Japan's Pacific mandate.** 1935 [M 952]
- Cobb: Paths of glory.** 1935 [M 9403-B3-F.44]
- Dictionary of American biography.** Vol. XVI: Robert—Seward. 1935 [973-B920]
- Drew: Canada's fighting airmen.** 1930 [M 9403-G9-B4.71]
- Encyclopedia of Canada.** Vol. I: Aaltanhash—Cartierville. 1935 [971]
- Encyclopedia of the Social Sciences.** Vol. XV: Trade Unions—Zwingli. 1935 [303]
- Federal Reporter, Second Series.** Vol. 75 (2d) April—May 1935. 1935 [345.41]
- Federal Supplement.** Vol. 9: February—April 1935. 1935 [345.41]
- France. Ministère de la Guerre:**
Annuaire officiel des officiers de l'armee active. [Official army register, French Army, 1934.] 1934 [M 206-C.44-E3-C]
Les armées Françaises dans la grande guerre. Tome VIII: La campagne d'Orient (Dardanelles et Salonique). Deuxieme Volume: La campagne d'Orient depuis l'intervention de la Roumanie en août 1916 jusqu'en avril 1918. [The French Armies in the Great War. Tome VIII: The campaign in the East (Dardanelles and Salonika). Part II: The campaign in the east before the intervention of Roumania in August 1916 until April 1918.] 1934 (7 volumes) [M 9403-E4-D.44-C]
- Fuller: The Army in my time.** 1935 [M 203-C.42-C]
- Gordon: The War Office.** 1935 [M 204-C.42-E]
- Great Britain. War Office:**
Military engineering. Vol. III—Part 1. Bridging. (General principles and materials.) 1934 [M 410-H1-C.42]
Military engineering (Vol. VIII) Railways. 1929 [M 410-H10-C.42]
Manual of movement (War) 1933. 1933 [M 504-A1.42]
- Gulick: Toward understanding Japan.** Constructive proposals for removing the menace of war. 1935 [M 952]
- Heigl: Taschenbuch der Tanks.** 1935 [M 614-H1]
- Hindenburg, 1847-1934: Soldier and statesman.** (Translation from the German) 1935 [M 9403-E4-E.43-B92 (H1)]
- History of the Japanese German War, 1914.** Volume I, Chapters 1 to 6. [M 9403-J.51]
- Levy: Industrial Germany.** A study of its monopoly organizations and their control by the state. 1935 [338.843]
- Marie, Queen of Roumania: Ordeal: The story of my life.** 1935 [9498-B92 (MA)]
- Napoleon I: Napoleon's letters to Marie Louise.** 1935 [M 94405-N5]
- National Advisory Committee for Aeronautics: Bibliography of aeronautics, 1931.** 1935 [M 603]

New International Year Book. A compendium of the world's progress for the year 1934. 1935 [031]

Phipps: The armies of the first French Republic and the rise of the Marshals of Napoleon I. Vol. IV: The Army of Italy 1796 to 1797; Paris and the Army of the Interior 1792 to 1797, and the coup d'etat of Fructidor September 1797. 1935 [M 94405-E4-C.44-A]

Pratt: Ordeal by fire. An informal history of the Civil War. 1935 [M 9737-E3-A]

Reinwaldt: Von Hannibal bis Hindenburg. Heerführer der Weltgeschichte. [From Hannibal to Hindenburg. Leaders in world history.] 1935 [M 601-G5-A]

Riddell: The Treaty of Versailles and after. 1935 [M 9403-C7-J3]

Rowan-Robinson: Security? A study of our military position. 1935 [M 103-C.42]

Sandes: The military engineer in India. (2 volumes) 1933 [M 410-C.42-A]

Schuman: The Nazi dictatorship. A study in social pathology and the politics of Fascism. 1935 [M 943-A]

Smorgorzewski: Poland's access to the sea. 1934 [M 9438]

Tsurumi: Le conflit sino-japonais. [The Sino-Japanese conflict.] 1932 [M 952]

Tyng: The campaign of the Marne 1914. 1935 [M 9403-J.44:4N5-M]

Wer ist's? Vol. VIII. 1922 [943-B920]

Woodman: Hitler rearms. An exposure of Germany's war plans. 1934 [M 103-C.43-A]

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List of Periodicals Indexed

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Key to Abbreviations

A&N Jour —Army & Navy Journal	Naz Mil —Nazione Militare (Italy)
A&N Reg —Army & Navy Register	Pion —Pioniere (Germany)
A Med Bul —Army Medical Bulletin	QM Rev —Quartermaster Review
AN&AF Gaz —Army, Navy & Air Force Gazette (Great Britain)	Rev Ej Mar —Revista del Ejército y de la Marina (Mexico)
A Ord —Army Ordnance	Rv l'Air —Revue de l'Armée de l'Air (France)
A Quar —Army Quarterly (Great Britain)	Rv d'Art —Revue d'Artillerie (France)
Bul Belge Mil —Bulletin Belge des Sciences Militaires (Belgium)	Rv de Cav —Revue de Cavalerie (France)
Can Def Quar —Canadian Defence Quarterly (Canada)	Rv d'Inf —Revue d'Infanterie (France)
Cav Jour —Cavalry Journal	Rv Gen Mil —Revue du Génie Militaire (France)
Cav Jour [GB] —Cavalry Journal (Great Britain)	Rv Mil Fran —Revue Militaire Française (France)
Chem War —Chemical Warfare Bulletin	Rv Mil Suisse —Revue Militaire Suisse (Switzerland)
CA Jour —Coast Artillery Journal	Riv Art e Gen —Rivista di Artiglieria e Genio (Italy)
FA Jour —Field Artillery Journal	RAF Quar —Royal Air Force Quarterly (Great Britain)
Ftg Forc —Fighting Forces (Great Britain)	RASC Quar —Royal Army Service Corps Quarterly (Great Britain)
Inf Jour —Infantry Journal	Roy Eng Jour —Royal Engineers Journal (Great Britain)
Jour R Art —Journal Royal Artillery (Great Britain)	Roy Tk C Jour —Royal Tank Corps Journal (Great Britain)
Jour RUSI —Journal of the Royal United Service Institution (Great Britain)	Sanct Chris —Sanct Christophorus (Germany)
MC Gaz —Marine Corps Gazette	SC Bul —Signal Corps Bulletin
Mil Mitt —Militärwissenschaftliche Mitteilungen (Austria)	Wr & Wf —Wehr und Waffen (Germany)
Mil-Woch —Militär-Wochenblatt (Germany)	Ws & Wr —Wissen und Wehr (Germany)
Mil Eng —Military Engineer	For Pol Rep —Foreign Policy Reports
Mil Surg —Military Surgeon	
Nav Inst Proc —Naval Institute Proceedings	

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Requirements of an advance guard for support by its artillery. (FA Jour—May-Jun 1935)

ADDRESSES

General MacArthur speaks. (A&N Jour—20 Jul 1935)

AERIAL WARFARE

Some aspects of air operations at sea. (Jour RUSI—May 1935)
 Seadromes. (Jour RUSI—May 1935)
 Further notes on the protection of M.T. from air attack. (RASC Quar—May 1935)
 Practical instruction on the passive defense against aerial attacks. [See Section 6.]
 Air power and the sea. (AN&AF Gaz—16 May 1935)
 Air defence. (AN&AF Gaz—6 Jun 1935)
 General information on the passive defense of greater Brussels. (Bul Belge Mil—Mar 1935)
 History of aero-maritime operations in Flanders 1914-1916. (Rv l'Air—Feb 1935)

AIR ARM**Command and Staff**

The air estimates. (AN&AF Gaz—7 Mar 1935)
 Air power and the sea. (AN&AF Gaz—16 May 1935)
 Flying proficiency board. (A&N Reg—13 Jul 1935)
 Other arms opposing special air promotion. (A&N Jour—11 May 1935)
 Special air promotion hit by Infantry Chief. (A&N Jour—18 May 1935)
 Pay of air officers temporarily advanced in rank. (A&N Jour—25 May 1935)
 Some problems of fleet aviation. (Rv l'Air—Jan 1935)

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